SAMSUNG

# Color Laser Printer

# CLP-610ND
# CLP-660N/660ND

## CLP-610ND/XAZ

**Basic Model : CLP-610ND, 660ND**

# SERVICE *Manual*

## Samsung Color Laser Printer

## The keynote of Product

**High SMB/Easy of Use Tandem CLBP**

- Emulation : CLP-610ND(SPL-C), CLP-660, 660N(PostScript 3, PCL6)
- Speed : CLP-610ND(20/20 ppm), CLP-660, 660N(24/24 ppm)
- Resolution : CLP-610ND(1,200 x 600 dpi), CLP-660N, 660ND(1,200 x 600 dpi)
- CPU : CLP-610ND(300 MHz), CLP-660N, 660ND(533 MHz)
- Interface : N/W
- Memory : CLP-610ND / 64 MB, CLP-660N, 660ND/128 MB (Max. 640 MB)
- Duplex (Option)
- 250 CST, 1 Manual, 100 MP
- Toner Cartridge: 2.5K/2K (Std.), 5.5K/5K (High)
- Printer Life: Color 200K / Mono 200K pages

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# 1. Precautions

In order to prevent accidents and to prevent damage to the equipment please read the precautions listed below carefully before servicing the printer and follow them closely.

## 1.1 Safety Warning

(1) Only to be serviced by appropriately qualified service engineers.
High voltages and lasers inside this product are dangerous. This printer should only be serviced by a suitably trained and qualified service engineer.

(2) Use only Samsung replacement parts
There are no user serviceable parts inside the printer. Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

(3) Laser Safety Statement
The Printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1(1) laser products, and elsewhere, it is certified as a Class I laser product conforming to the requirements of IEC 825. Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Warning >> Never operate or service the printer with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes. When using this product, these basic safety pre-cautions should always be followed to reduce risk of fire, electric shock, and injury to persons.

CAUTION - INVISIBLE LASER RADIATION □ WHEN THIS COVER OPEN. □ DO NOT OPEN THIS COVER.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG, □ WENN ABDECKUNG GEÖFFNET. □ NICHT DEM STRAHL AUSSETZEN.

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS □ D'OUVERTURE. EXPOSITION DANGEREUSE □ AU FAISCEAU.□

ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI □ APERTURA. EVITARE L'ESPOSIZIONE AL □ FASCIO.

PRECAUCION - RADIACION LASER IVISIBLE CUANDO SE ABRE. □ EVITAR EXPONERSE AL RAYO.

ADVARSEL. - USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR □ SIKKERHEDSBRYDERE ER UDE AF FUNKTION. □ UNDGÅ UDSAETTELSE FOR STRÅLNING.

ADVARSEL. - USYNLIG LASERSTRÅLNING NÅR DEKSEL □ ÅPNES. STIRR IKKE INN I STRÅLEN. □ UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL □ ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. □ BETRAKTA EJ STRÅLEN. STRÅLEN ÄR FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA □ OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER-□ SÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

注 意 - 严禁渴开此盖, 以免激光泄露灼伤

주 의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로 주의하십시오.

# 1.2 Caution for safety

## 1.2.1 Toxic material

This product contains toxic materials that could cause illness if ingested.

(1) If the LCD control panel is damaged it is possible for the liquid inside to leak. This liquid is toxic. Contact with the skin should be avoided, wash any splashes from eyes or skin immediately and contact your doctor. If the liquid gets into the mouth or is swallowed see a doctor immediately.

(2) Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor.

## 1.2.2 Electric Shock and Fire Safety Precautions

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

(1) Use only the correct voltage, failure to do so could damage the printer and potentially cause a fire or electric shock.

(2) Use only the power cable supplied with the printer. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.

(3) Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.

(4) Do not allow water or other liquids to spill into the printer, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the printer these could cause a short circuit leading to an electric shock or fire hazard..

(5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the printer remove the power plug from the wall socket.

(6) Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise a poor contact could cause overheating possibly leading to a fire. When removing the power connector grip it firmly and pull.

(7) Take care of the power cable. Do not allow it to become twisted, bent sharply round corners or otherwise damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can attack the coating on the power cable, weakening the cover or exposing cables causing fire and shock risks.

(8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.

(9) Use caution during thunder or lightening storms. Samsung recommend that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.

(10) Avoid damp or dusty areas, install the printer in a clean well ventilated location. Do not position the machine near a humidifier. Damp and dust build up inside the machine can lead to overheating and cause a fire.

(11) Do not position the printer in direct sunlight. This will cause the temperature inside the printer to rise possibly leading to the printer failing to work properly and in extreme conditions could lead to a fire.

(12) Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.

## 1.2.3 Handling Precautions

The following instructions are for your own personal safety, to avoid injury and so as not to damage the printer

(1) Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall.
(2) The printer contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.
(3) Do not place any small metal objects, containers of water, chemicals or other liquids close to the printer which if spilled could get into the machine and cause damage or a shock or fire hazard.
(4) Do not install the machine in areas with high dust or moisture levels, beside on open window or close to a humidifier or heater. Damage could be caused to the printer in such areas.
(5) Do not place candles, burning cigarettes, etc. on the printer, these could cause a fire.

## 1.2.4 Assembly / Disassembly Precautions

Replace parts carefully, always use Samsung parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly. Please carry out the following procedures before dismantling the printer or replacing any parts.

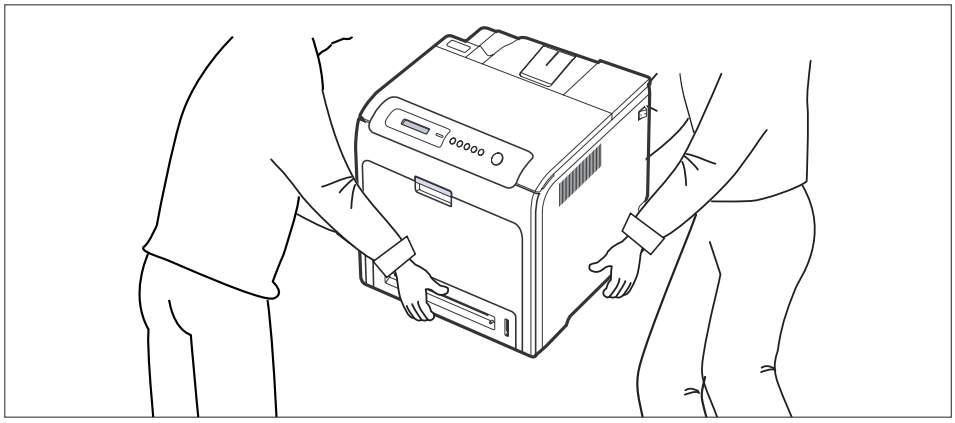
(1) Check the contents of the machine memory and make a note of any user settings. These will be erased if the mainboard is replaced.
(2) Ensure that power is disconnected before servicing or replacing any electrical parts.
(3) Disconnect printer interface cables and power cables.
(4) Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.
(5) When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
(6) Take care not to drop any small parts into the machine.
(7) Handling of the OPC Drum
- The OPC Drum can be irreparably damaged if it exposed to light.
  Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 mins can damage the surface's photoconductive properties and will result in print quality degradation. Take extra care when servicing the printer. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the covers(especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.
- Take care not to scratch the green surface of OPC Drum Unit.
  If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

## 1.2.5 Disregarding this warning may cause bodily injury

**(1) Be careful with the high temperature part.**
The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser to cool down before disassembly.

**(2) Do not put finger or hair into the rotating parts.**
When operating a printer, do not put hand or hair into the rotating parts (Paper feeding entrance, motor, fan, etc.). If do, you can get harm.

**(3) When you move the printer.**
This printer weighs 25.6 Kg(56.44 lbs) including with consumables. Use safe lifting and handling techniques. Back injury could be caused if you do not lift carefully.



**(4) Ensure the printer is installed safely.**
The printer weighs 25.6 Kg(56.44 lbs), ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.

**(5)** Do not install the printer on a sloping or unstable surface. After installation, double check that the printer is stable.

## 1.3 ESD Precautions

Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called "Electrostatically Sensitive (ES) Devices", or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor "chip" components.

The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.

Caution >>Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

1. Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
3. Use only a grounded tip soldering iron to solder or desolder ESDs.
4. Use only an "anti-static" solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
5. Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.
7. Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
8. Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.
9. Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one's foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.

## 1.4 Super Capacitor or Lithium Battery Precautions

1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.

2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturer.

3. Super capacitor or Lithium batteries contain toxic substances and should not be opened, crushed, or burned for disposal.

4. Dispose of used batteries according to the manufacture's instructions.

# 2. Product specification and feature

## 2.1 Product Specifications

### 2.1.1 Product Overview

| | |
|---|---|
| Concept | Low CPP/Easy of Use Tandem CLBP |
| Target | SMB (Small workgroup/biz) |

**< CLP-610 Series >**

- 20/20 ppm
- Max 1,200 x 1,200 dpi effective output
- CHORUS3(SOC)
- GDI, N/W
- 250 CST, 100 MP
- Duplex
- 2.5K/2K (Std.)
- 5.5K/5K (High)

**< CLP-660 Series >**

- 24/24 ppm
- Max 1,200 x 1,200 dpi effective output
- 533 MHz
- PCL6/PS3, N/W
- 250 CST, 100 MP
- Duplex
- 2.5K/2K (Std.)
- 5.5K/5K (High)

## 2.1.2 Specifications

• Product Specifications are subject to change without notice. See below for product specifications.

### 2.1.2.1 General Print Engine

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| Engine Speed | Simplex | B&W : Up to 20 ppm in A4 (21 ppm in Letter)<br>Color : Up to 20 ppm in A4 (21 ppm in Letter) | B&W : Up to 20 ppm in A4 (25 ppm in Letter)<br>Color : Up to 20 ppm in A4 (25 ppm in Letter) |
| | Duplex | CLP-610N : Manual<br>CLP-610ND : Built-in | CLP-660/660N : Manual<br>CLP-660ND : Built-in |
| Warmup time | | Less than 20 sec | Less than 20 sec |
| FPOT (B&W) | From Ready | Less than 12 sec | Less than 12 sec |
| | From Idle | Less than 32 sec | Less than 32 sec |
| | From Coldboot | Less than 32 sec | Less than 32 sec |
| FPOT (Color) | From Ready | Less than 12 sec | Less than 12 sec |
| | From Idle | Less than 32 sec | Less than 32 sec |
| | From Coldboot | Less than 32 sec | Less than 32 sec |
| Resolution | Optical | 600 x 600 dpi | 600 x 600 dpi |
| | Support | Max : 1,200 x 1,200dpi effetive output<br>Default : 1,200 x 600dpi<br>Min : 600 x 600 dpi | Max : 1,200 x 1,200dpi effetive output<br>Default : 1,200 x 600dpi<br>Min : 600 x 600 dpi |

## 2.1.2.2 Controller & S/W

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| CPU | | CHORUS3(SOC) | Mips 533MHz+ SPGPXm |
| Memory | Std. | 128MB(DDR2) | 128MB(DDR1) |
| | Max. | 128MB(DDR2) | 640 MB |
| Memory Expansion | | N/A | 1 Slot |
| Printer Languages | | SPL-C (Samsung Printer Language Color) | PostScript 3, PCL6 |
| Fonts | | Windows Fonts | 45 scalable and 1 bitmap PCL and 136 PS |
| Driver | Supporting OS | Windows 98/Me/2000/XP/2003/Vista | Windows 98/Me/2000/XP/2003/Vista |
| | | Various Linux including Red Hat 8.0~9.0, Mandrake 9.2~10.1, SuSE 8.2~9.2 and Fedora Core 1~4 | Various Linux including Red Hat 8.0~9.0, Mandrake 9.2~10.1, SuSE 8.2~9.2 and Fedora Core 1~4 |
| | | Mac OS 10.3~10.4 and Universal Mac | Mac OS 10.3~10.4 and Universal Mac |
| | Default Driver | - SPL-C (Samsung Printer Language Color) | - PCL6c |
| | WHQL | Windows 2000/XP/2003/Vista | Windows 2000/XP/2003/Vista |
| | Language Localization | Korean, English, French, German, Italian, Spanish, Russian, Dutch, B.Portuguese, E.Portuguese, Finish, Swedish, Norwegian, Danish, S.Chinese, T.Chinese, Polish, Hungarian, Czech | Korean, English, French, German, Italian, Spanish, Russian, Dutch, B.Portuguese, E.Portuguese, Finish, Swedish, Norwegian, Danish, S.Chinese, T.Chinese, Polish, Hungarian, Czech |
| Application | RCP | USB / Network | CLP-660 : USB<br>CLP-660N/660ND : USB / Network |
| | Smart Panel | Yes | Yes |
| | Network Management | Set IP, Samsung Web Admin Service 4.0 (SWAS 4.0)(Linux, SWAS: Iexplorer 5.0 or higher, Mac: not supported) | Set IP, Samsung Web Admin Service 4.0 (SWAS 4.0)(Linux, SWAS: Iexplorer 5.0 or higher, Mac: not supported) |
| | SmarThru4 | N/A | N/A |

## 2.1.2.3 Interface

| Item | CLP-610ND | CLP-660N/660ND |
|---|---|---|
| Parallel | N/A | N/A |
| USB | USB 2.0 | USB 2.0 |
| Network | Ethernet 10/100 Base TX | CLP-660 : Option<br>CLP-660N/660ND : Ethernet 10/100 Base TX |
| Network Protocol | TCP/IP,SNMP,HTTP1.1 | CLP-660 : N/A<br>CLP-660N/660ND : TCP/IP,SNMP,HTTP1.1 |
| LCD & Button | LCD, 6 key | LCD, 6 key |
| LED | 1 LED for status (Green/Red) | 1 LED for status (Green/Red) |

## 2.1.2.4 Paper Handling

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| Standard Capa. | | 250-sheet Cassette Tray, 1 Manual | 250-sheet Cassette Tray, MP 100 |
| Max. Capa. | | 850 sheets @ 75g/㎡ | 850 sheets @ 75g/㎡ |
| Printing | Max. Size | 216 x 356mm (8.5" x 14") | 216 x 356mm (8.5" x 14") |
| | Min. Size | 76 x127mm (3" x 5") | 76 x127mm (3" x 5") |
| | Margin(T/B/L/R) | 4 mm, 4 mm, 4 mm, 4 mm | 4 mm, 4 mm, 4 mm, 4 mm |
| MP Tray Capacity | | 100 sheets @ 75g/㎡ | 100 sheets @ 75g/㎡ |
| MP Tray Sensing | | Empty sensing<br>No size sensor | Empty sensing<br>No size sensor |
| Standard Cassette Capacity | | 250 sheets @ 75g/㎡ | 250 sheets @ 75g/㎡ |
| Cassette Size sensor | | N/A | N/A |
| Cassette Paper Sensing | | Paper empty sensor | Paper empty sensor |
| SCF Cassette Capacity | | 500 sheets @ 75g/㎡ | 500 sheets @ 75g/㎡ |
| SCF Cassette Size sensor | | N/A | N/A |
| SCF Cassette Paper Sensing | | Empty sensing | Empty sensing |
| Output Stacking | FaceUp | N/A | N/A |
| | FaceDown | 200 sheets @ 75g/㎡ (TBD) | 200 sheets @ 75g/㎡ (TBD) |
| Output Full sensing | | N/A | N/A |
| Duplex Supporting | | Std. | Std. |

## 2.1.2.5 CRU

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| No. of CRUs | | 4 (C/M/Y/K toner)<br>K toner cartridge: CLP-K660A<br>C toner cartridge: CLP-C660A<br>M toner cartridge: CLP-M660A<br>Y toner cartridge: CLP-Y660A | 4 (C/M/Y/K toner)<br>K toner cartridge: CLP-K660A<br>C toner cartridge: CLP-C660A<br>M toner cartridge: CLP-M660A<br>Y toner cartridge: CLP-Y660A |
| Toner | Black | 2,500 A4/Letter pages Standard yield ,at 5% Coverage,<br>5,500 A4/Letter pages High yield, at 5% Coverage<br>(Ships with Standard yield Starter toner cartridge) | 2,500 A4/Letter pages Standard yield ,at 5% Coverage<br>5,500 A4/Letter pages High yield, at 5% Coverage<br>(Ships with Standard yield Starter toner cartridge) |
| | Color | 2,000 A4/Letter pages Standard yield ,at 5% Coverage<br>5,000 A4/Letter pages High yield, at 5% Coverage<br>(Ships with Standard yield Starter toner cartridge) | 2,000 A4/Letter pages Standard yield ,at 5% Coverage<br>5,000 A4/Letter pages High yield, at 5% Coverage<br>(Ships with Standard yield Starter toner cartridge) |
| | Key | Unique, Electronic key(CRUM) | Unique, Electronic key(CRUM) |
| | Replace method | CRUM for appropriate installation of each cartridge<br>3 step for install/replacing | CRUM for appropriate installation of each cartridge<br>3 step for install/replacing |
| PTB | | 50,000 Pages | 50,000 Pages |

## 2.1.2.6 FRU

| Item | CLP-610ND | CLP-660N/660ND |
|---|---|---|
| Fuser | 100,000 Pages | 100,000 Pages |
| Pick-up Roller | 70,000 Pages | 70,000 Pages |
| Friction pad | 70,000 Pages | 70,000 Pages |

## 2.1.2.7 Reliability & Service

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| Printing Volume(AMPV) | | 630 page ( B&W : 252 page, Color : 378 pages) | 630 page ( B&W : 252 page, Color : 378 pages) |
| Max Monthly Duty | | 100,000 pages | 100,000 pages |
| MTTR | | <30 min. | <30 min. |
| Product Life | | 200,000 image or 5 years whitchever comes first | 200,000 image or 5 years whitchever comes first |
| System information record | | Total page count (color/mono)<br>Fuser life<br>Transfer belt life<br>Toner image count (CMYK)<br>Tray roller life<br>First operation date(Not revealed to Users) | Total page count (color/mono)<br>Fuser life<br>Transfer belt life<br>Toner image count (CMYK)<br>Tray roller life<br>First operation date(Not revealed to Users) |
| Test Print | | Configuration Sheet<br>Menu Map Sheet<br>Demo Sheet | Configuration Sheet<br>Menu Map Sheet<br>Demo Sheet |
| RDC | Comm. Mode | USB & NW | USB & NW |
| | Operation | TBD(Status report<br>F/W reset/writing<br>NV-RAM operation<br>Record tracking<br>Administration alert) | TBD(Status report<br>F/W reset/writing<br>NV-RAM operation<br>Record tracking<br>Administration alert) |
| Temperature | Operating | 15~32.5 (59~90.5) | 15~32.5 (59~90.5) |
| | Storage | -20~40(-4~104) | -20~40(-4~104) |
| Humidity | Operating | -10" ~ 80RH | -10" ~ 80RH |
| | Storage | 0~95RH | 0~95RH |

## 2.1.2.8 Environment

| Item | | CLP-610ND | CLP-660N/660ND |
|---|---|---|---|
| Acoustic Noise Level(Sound Power/Pressure) | Printing | Less than 50 dBA | Less than 50 dBA |
| | Standby | Less than 35 dBA | Less than 35 dBA |
| | Sleep | Background noise level | Background noise level |
| Input Voltages | | 110-127 VAC, 50/60Hz | 110-127 VAC, 50/60Hz |
| | | 220-240 VAC,50/60Hz | 220-240 VAC,50/60Hz |
| | | Power Switch | Power Switch |
| Power Consumption | AVG. | Less than 600W | Less than 600W |
| | Sleep | Less than 35W | Less than 35W |
| Dimension (W x D x H) | Set | 432 x 428 x 426 mm | 432 x 428 x 426 mm |
| Weight | Set (with consumables) | 25.6 kg (with consumables) | 25.6 kg (with consumables) |

## 2.1.2.9 Accessory

| Item | CLP-610ND | CLP-660N/660ND |
|---|---|---|
| In-Box | Machine<br>K/C/M/Y Toner (K:2.5K , C/M/Y:2K)<br>Power cord<br>USB cable (China, Korea, CIS, India)<br>Set-up CD<br>QIG(Quick installation Guide sheet)<br>Warranty book<br>Manual Book: Domestic Only<br>N/W CD (Application, manual) | Machine<br>K/C/M/Y Toner (K:2.5K , C/M/Y:2K)<br>Power cord<br>USB cable (China, Korea, CIS, India)<br>Set-up CD<br>QIG(Quick installation Guide sheet)<br>Warranty book<br>Manual Book: Domestic Only<br>N/W CD (Application, manual) |

## 2.1.2.10 Options

| Item | CLP-610ND | CLP-660N/660ND |
|---|---|---|
| Memory | N/A | N/A |
| Second Cassette | 500- sheet Cassette | 500- sheet Cassette |
| PostScript | N/A | N/A |
| Network | Built-in | Built-in |
| Wireless Network | N/A | N/A |
| Hard Disk | N/A | N/A |

## 2.1.3 Maintenance List (CRU & FRU)

| CRU /FRU | Modes | Life (Expected Average based on AMPV usage ratio) | | | | Max. Life | |
|---|---|---|---|---|---|---|---|
| | | Expected Life | | Total Image | TotalPage | Color only (page) | Mono only(page) |
| | | pages | Images | | | | |
| SET | Mono (40%) | 80K | 80K | 200,000 | 200,000 | 200,000 | 0 |
| | Color (60%) | 120K | 120K | | | 0 | 200,000 |
| Toner Cartridge (5% coverage) | Cyan | 5,000 | | 5,000 | 5,000 | 5,000 | |
| | Magenta | 5,000 | | 5,000 | 5,000 | 5,000 | |
| | Yellow | 5,000 | | 5,000 | 5,000 | 5,000 | |
| | Black | 5,500 | | 5,500 | 5,500 | 5,500 | |
| PTB Unit | Color | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | |
| | Mono | 50,000 | 50,000 | | | - | |
| Fuser Unit | Color | 100,000 | | | | 100,000 | 0 |
| | Mono | 100,000 | | | | 0 | 100,000 |
| Pick Up | Color / Mono | 70,000 | | | | 70,000 | 70,000 |
| Friction Pad | Color / Mono | 70,000 | | | | 70,000 | 70,000 |

* Toner Cartridge yield : Average CMY Cartridge Yield 5000 standard pages
Average K Cartridge Yield 5500 standard pages
Declared yield value in accordance with ISO/IEC 19798

## 2.1.4 Periodic Replacing Parts

Samsung shall specify parts requiring replacement and the frequency of replacement. The parts identified may be deemed customer replaceable parts. Periodic replacement parts shall be recommended as follows

| | | |
|---|---|---|
| Toner Cartridge | 2K(Color), 2.5K(Mono) Page5K(Color), 5.5K (Mono) pages | Initial Toner, User replaceableUser replaceable |
| PTB Unit | 50K(Color/Mono) Images | User replaceable |
| Pick up(FCF, SCF, MPF) | 70K(Color/Mono) pages | Field replaceable |
| Friction Pad(FCF, SCF, MPF) | 70K(Color/Mono) pages | Field replaceable |

** Based on Printing Volume ratio of 60% Color and 40% B/W

## 2.1.5 Competitor Model

■ SEC Model

| | CLP-610ND | CLP-660N | CLP-660ND |
|---|---|---|---|
| Image | | | |
| Speed (ppm) | 20/20 | 24/24 | 24/24 |
| Resolution (dpi) | 1,200 x 600 | 1,200 x 600 | 1,200 x 600 |
| CPU (MHz) | 266 | 533 | 533 |
| Memory (MB) | 64 | 128 (Max.640) | 128 (Max.640) |
| FPOT (sec) | 12 | 12 | 12 |
| N/W | N/W | N/W | N/W |
| Duplex | Built in | Manual | Built in |
| Paper Handling | 250 CST<br>100 MP | 250 CST<br>100 MP | 250 CST<br>100 MP |
| Toner | 2.5K / 2K / 5.5K / 5K | 2.5K / 2K / 5.5K / 5K | 2.5K / 2K / 5.5K / 5K |
| SCF | 500 sheet | 500 sheet | 500 sheet |

■ Competitor Model

| Model Name | Samsung CLP- 610ND | HP CLJ 2605n | OKI 3400N |
|---|---|---|---|
| Image | | | |
| Speed (ppm) | 20/20 | 12/10 | 20/16 |
| FPOT | 12 | 20 | 9/13 |
| Resolution | 1,200 x 600 dpi | 2,400 x 600 dpi | 1,200 x 600 dpi |
| Processor | 266 | 300 | 200 |
| Ram(Max.) | 32 | 64 (320) | 32 (288) |
| Emulation | GDI | PDL | GDI |
| Interface | USB 2.0, N/W | USB 2.0, N/W | USB 2.0, N/W |
| Paper Input (Capa./Type) | 250 CST, 1 Manual 500SCF | 250 CST, 1 Manual 250 SCF | 250 CST |
| Toner | 2.5K / 2K / 5.5K / 5K | 2.5K / 2K | - |

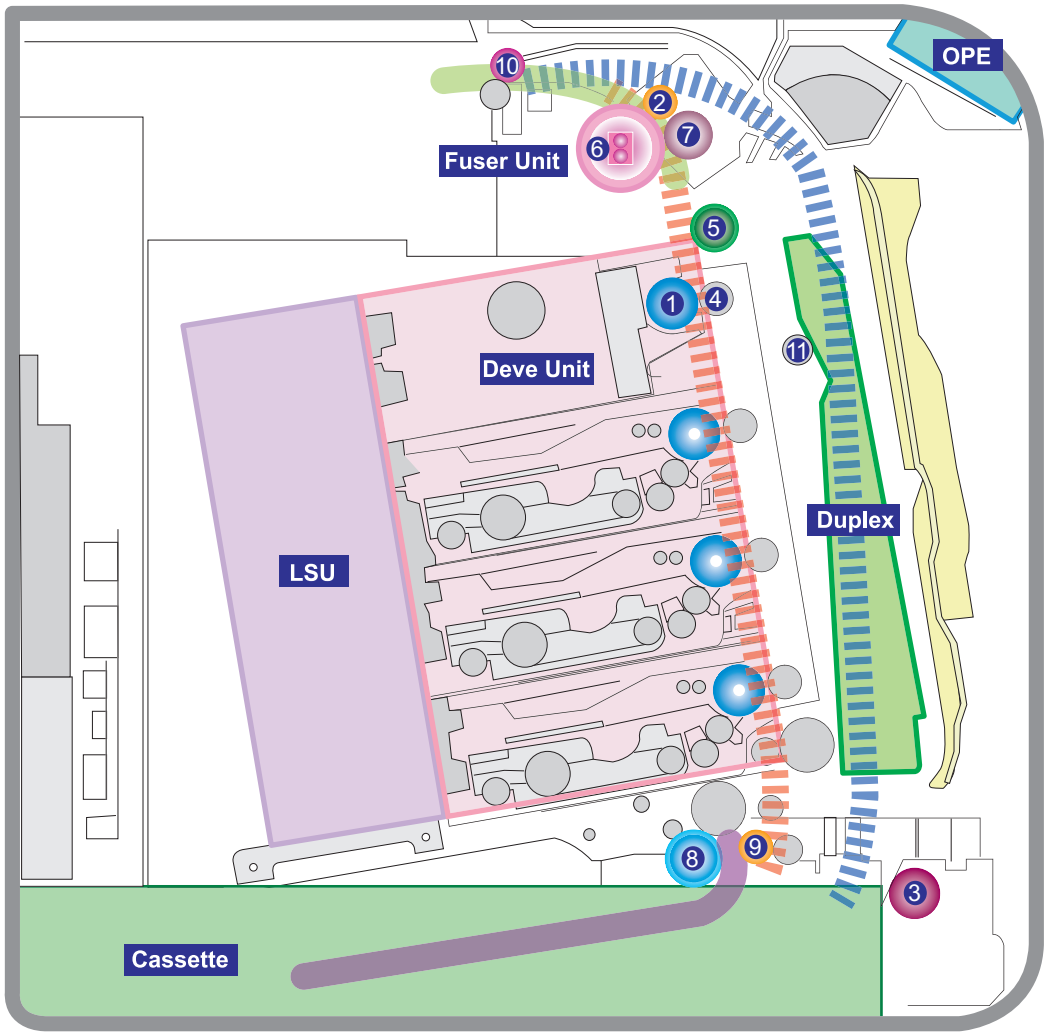
| Model Name | Samsung CLP- 660N | HP CLJ 3600n | Lexmark C524N | OKI 5500N | KM 5430DL |
|---|---|---|---|---|---|
| Image | | | | | |
| Speed (ppm) | 24/24 | 17/17 | 19/19 | 24/20 | 20/20 |
| FPOT | 12 sec | 14 sec | 13 sec | 9/13 sec | 14 sec |
| Resolution | 1,200 x 600 dpi | 3,600 x 600 dpi | 1,200 x 1,200 dpi | 1,200 x 600 dpi | 2,400 x 600 dpi |
| Processor | 533 | 360 | 500 | 200 | 200 |
| Ram(Max.) | 128 (640) | 64 | 128 (640) | 32 (288) | 64 (576) |
| Emulation | PDL | GDI | PDL | GDI | GDI |
| Interface | USB 2.0, N/W | USB 2.0, N/W | USB 2.0, N/W | USB 2.0, N/W | USB 2.0, N/W |
| Paper Input (Capa./Type) | 250 CST 100 MP 500 SCF | 250 CST 100 MP 500 SCF | 250 CST 100 MP 500 SCF | 300 CST 100 MP 530 SCF | 250 CST 500 SCF |
| Toner | 2.5K/2K/5.5K/5K | 6K/4K | 8K/5K (initial 1.5K) | 5K/5K (initial 1.5K) | 6K/6K (initial 3K) |

# 2.2 System Overview

This chapter describes the functions and operating principles of the main components.

## 2.2.1 System Structure

### 2.2.1.1 Main Parts of System



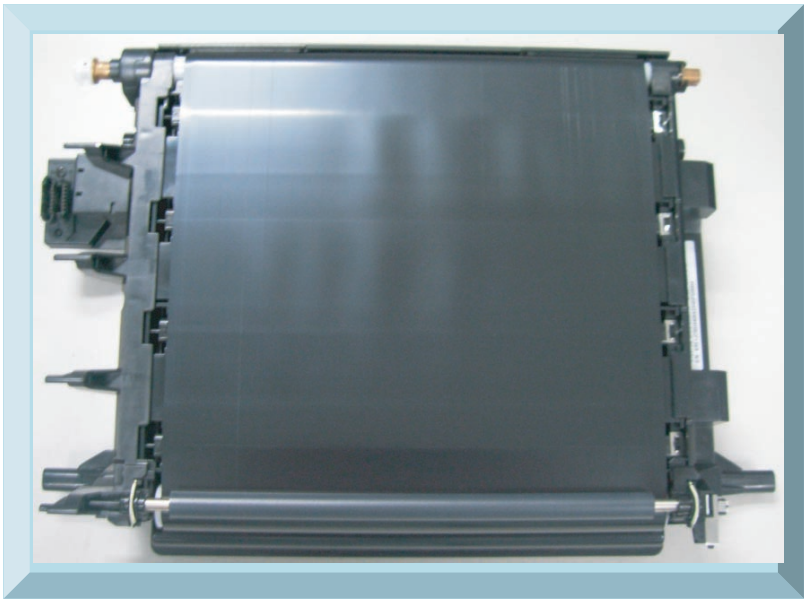

1. OPC (Organic Photo Conductor)
2. Charge Roller
3. MP Roller
4. Deve Roller
5. Transfer Roller
6. Heat Roller
7. Pressure Roller
8. Pick_up Roller
9. Rigi Roller
10. Exit Roller
11. Duplex Roller

### 1) Toner Cartridge

* Method of Toner supply : Toner is transported to the developing roller by supply belt.
* Regulating Toner level : Regulating Toner level by SUS. Blade
* OPC Cleaning: Collect the toner by using Cleaning Blade (urethane)
* OPC Drum protecting Shutter : No (Take care of impact)

### 2) PTB(Paper Transfer Belt)

* The life span: Print over 50,000 sheets
* Specification: Similar to DaVinci(CLP-600) Ass y.
* TANDEM Method Paper Transporting Unit by using Paper Transfer Belt
* Belt Driving Method : Friction Driving by Drive Roller
* Belt Cleaning : Collect the toner by using Rubber Blade
* Management of waste toner : The Waste Toner Tank Be equipped



### 3) Transfer Roller

Once the complete, full colour, image, has been built up on the ITB the Transfer Roller is used to transfer the image onto paper. This is called the T2 Transfer (T2 Transfer is none)

### 4) Cassette

* Feeding Method : Cassette Type
* Feeding Standard : Center Loading
* Feeding Capacity : Cassette 250 Sheets(75g/㎡, 20lb Paper Standard) Manual Feeder
* Paper Detecting Sensor : Photo Sensor (Empty, Registration, Exit)
* Paper Size Sensor : None

### 5) SCF (Second Cassette Feeder)

This additionally stores and automatically feeds printing paper. Its function is the same as the FCT (First Cassette Tray)

**> Spec.**

* Paper Direction : FISO (Front-in, Side-Out)
* Cassette Type : A4, Ltr
* Paper Discharge : Separation Claw
* Capacity : 500 Sheets (Standard paper 75mg/m² 20lb)
* Paper Size : A4, Letter
* Paper Weight (average) : 60~90g/m² (16~24lbs)
* Paper Type : General Printing Paper
* Additional Function : Paper Empty Sensor
  Paper Registration Sensor
  Paper Exit Sensor

### 6) MPF (Multi Purpose Feeder)

The Multi-Purpose Feeder not only feeds general printing paper but is also used for many other kinds of paper such as those paper sizes not supported by the cassette, envelopes, OHP, etc.

**> Spec.**

* Capacity : Cut Sheet : 100 Sheets (Standard paper 75mg/$m^2$ 20lb)
* OHP : 300 Sheets
* Envelope & Label & Card Stock : 10 Sheets
* Paper Arrangement : Side Registration
* Power : Main Motor (Stepper Motor)
* Driving Management : Solenoid
* Paper Discharge : Friction Pad Method
* Paper Size : Legal, Folio, A4, Letter, Executive, JIS B5, A5, A6
* Paper Weight (Average) : 75~163g/$m^2$
* Paper Type : General, Label, Post Card, Transparency, Envelope, Card Stock (Tracing Paper is not served)
* Additional Function : Paper Empty Sensor

### 7) Feeder

* Paper Arrangement : Side Registration.
* Power : Main Motor (Stepper Motor)
* Paper Management : Shutter Method

### 8) Duplex Unit

The Duplex function is used Duplex Unit of the PTB_SET.

CLP-660N : Manual
CLP-610ND,CLP-660ND : Built-in

### 9) Exit Unit

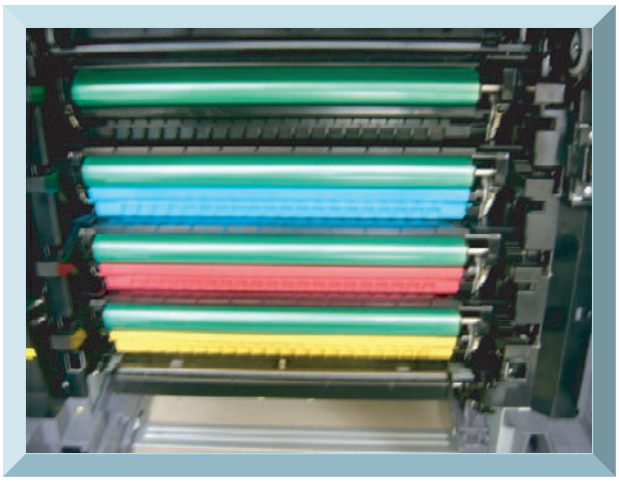
The Exit Unit guides paper that is just about to leave the print engine. Printed-paper is discharged by the Exit Roller and Kicker into the Output Tray.

**> Spec.**

* Capacity : 250 sheets (Standard A4, 75g/m2)
* Paper Direction : Face Down
* Exit Drive Roller : It is driven by Main Motor (BLDC), and it rotates clockwise for normal feed and antic-clockwise when reverse feeding for duplex printing.
* Sensor : There is photo interrupt sensing (GPIS73)
* Jam Detect : Exit Cover Open.

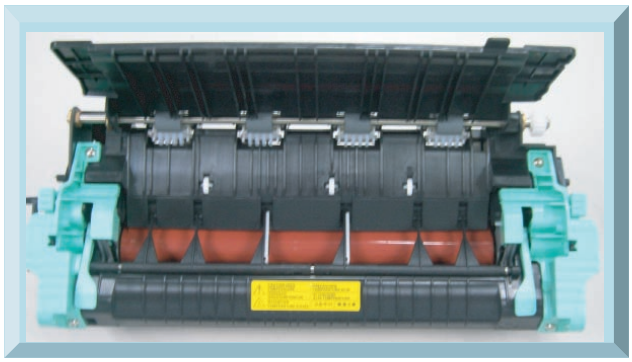
### 10) Toner Kits

* The life span: Color -> 5,000 images (Standard Coverage Print-Out)
  Black -> 5,500 images (Standard Coverage Print-Out)



### 11) Fuser Ass'y

* Heat Lamp : New Part - Dual Lamp Type(610:Single lamp type)
* Fusing system : Belt fusing type
  - Heat roller : Pipe type(Lamp inside)
  - Pressure roller
  - Fuser roller
  - Belt
* Thermistor - Temperature-Measuring Device
* Thermostat - Critical Temperature-Detecting Device



### 12) LSU(Laser Scan Unit)

* Consisted of LD(Laser Diode) and Polygon Motor Control.

| Error | Phenomenon |
|---|---|
| Polygon Motor Error | The Rotation of Polygon Motor can not reach stable |
| Hsync Error | Though the rotation of Polygon Motor reach stable, the signal of Hsync is not occurred |

### 13) Main Drive Unit

This motor drives, by way of a gearbox, the OPC unit, PTB unit, feeder unit, fuser unit, exit unit and duplex unit.

**> Spec.**

* Power : 20W Max (24V)
* Drives : OPC unit, PTB unit, Fuser, Feeder, Duplex unit, Exit unit

### 14) DEVE Drive Unit

This motor drives, by way of a gearbox, the toner cartridges and PTB cleaning cam.

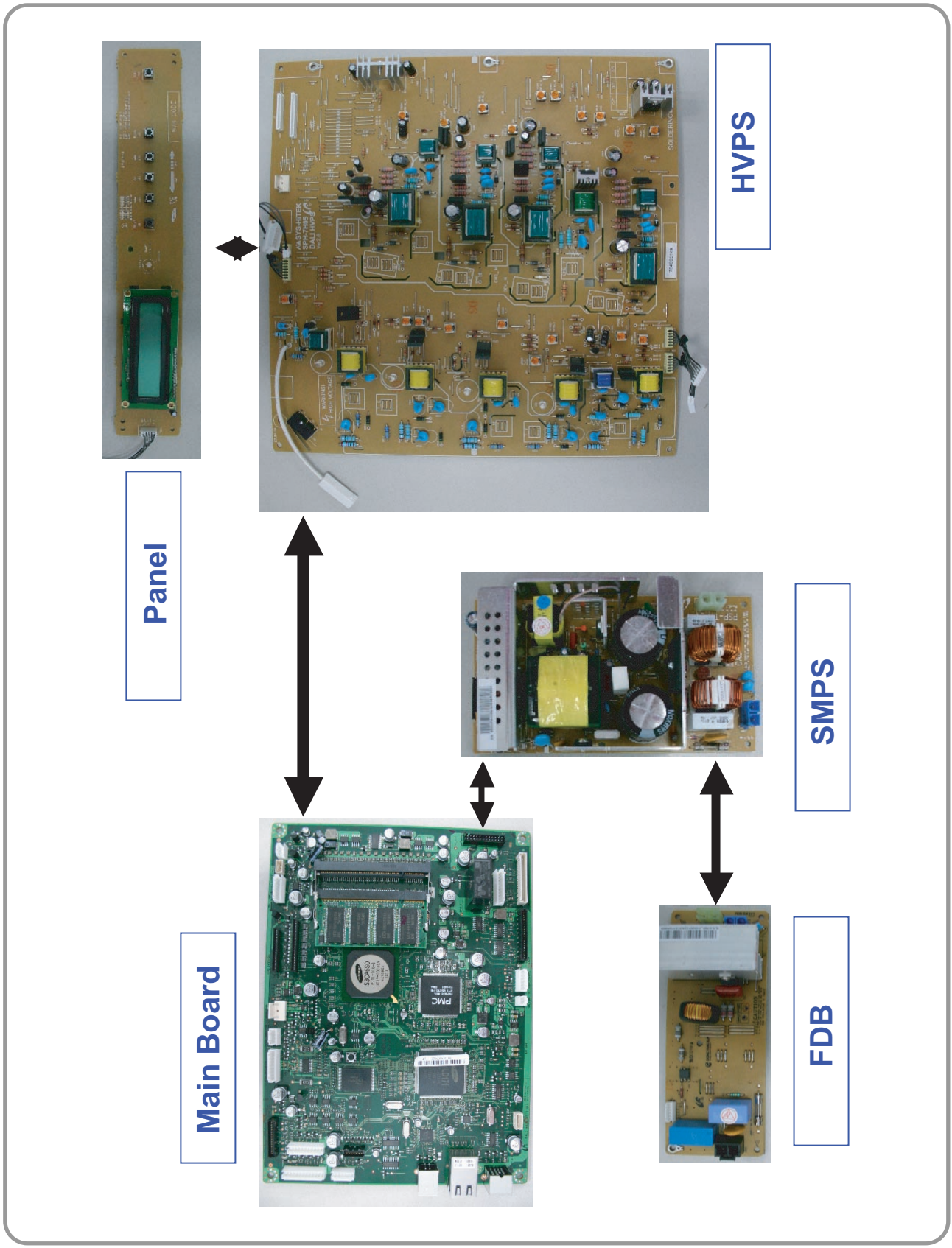
**> Spec.**

* Power : 20W Max (24V)
* Drives : DEV (4 Color)/ITB Cleaning)

### 15) SMPS (Switching Mode Power Supply)

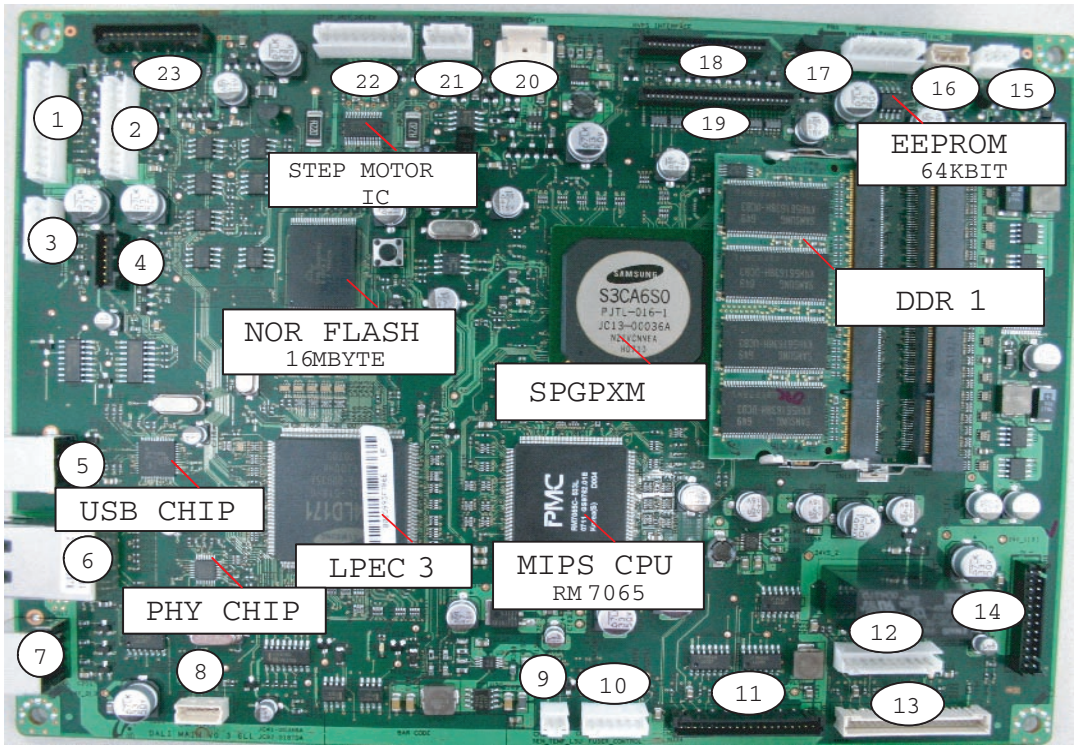
This power supply uses the AC supply voltage to generate the DC voltages used by the system. The SMPS has 5 output channels (+3.3V, +5V, +24V, +24VF1, +24VF2).
The AC Heater Control Unit that supplies power to the fuser is also located on the SMPS.

## 2.2.2 H/W Configuration (Engine & Controller)

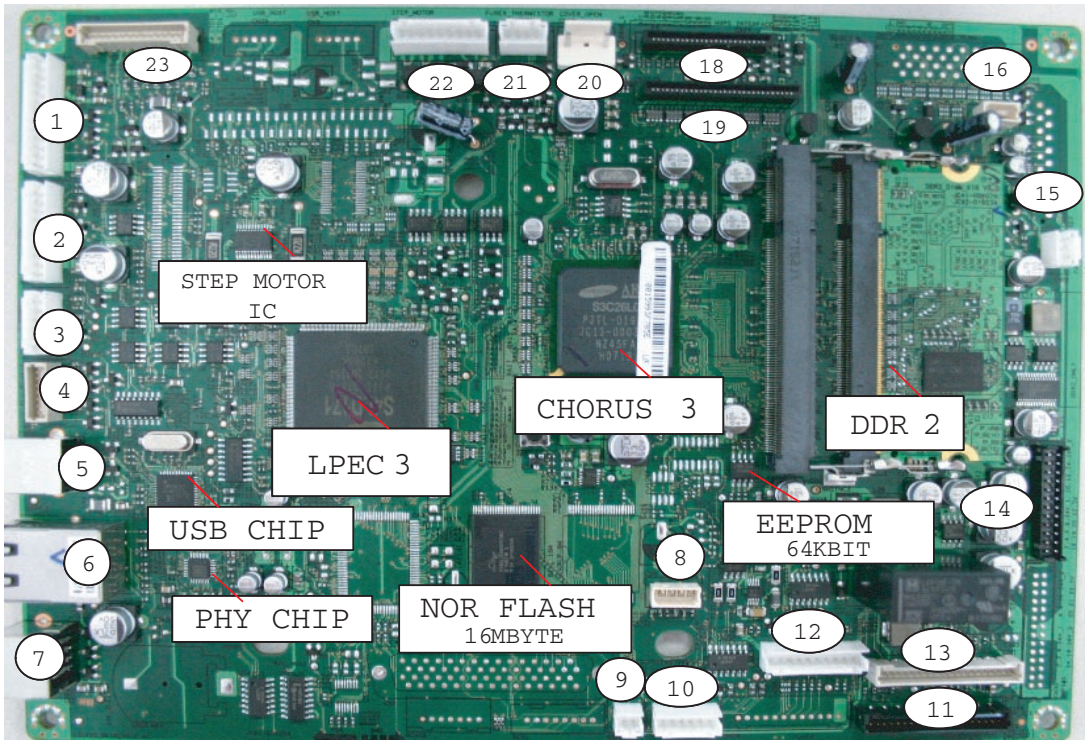


## 2.2.2.1 MAIN BOARD

**CLP-660**




**CLP-610**



| | | | |
|---|---|---|---|
| 1 | DEVE BLDC MOTOR ,PICKUP CLUTCH | 12 | LSU BLDC MOTOR |
| 2 | OPC BLDC MOTOR | 13 | LSU Y,M |
| 3 | HUMIDITY_INNER TEMP SENSOR | 14 | SMPS |
| 4 | DEVE CRUM I/F | 15 | REAR FAN |
| 5 | USB | 16 | SMPS FAN |
| 6 | LAN | 17 | PANEL (for debug) |
| 7 | SCF | 18 | HVPS1(PANEL,EXIT,REGI,EMPTY SENSOR, PICKUP) |
| 8 | DEBUG | 19 | HVPS2(HIGH VOLTAGE CONTROL) |
| 9 | LSU TEMP SENSOR (RESERVED) | 20 | 24V INTERLOCK SWITCH |
| 10 | FUSER CONTROL | 21 | FUSER THERMISTOR |
| 11 | LSU C,K | 22 | FUSER STEP MOTOR, FUSER FAN |
| | | 23 | PTB (CRUM, ACR) |

• CPU : CLP-610ND : Chorus3 (SoC)
CLP-660N/660ND : Mips 7065C 533MHz + SPGPXm

• Memory :
- RAM : CLP-610ND : DDR2 Default 128MB + Option 128MB/256MB
CLP -660N/660ND : DDR1 Default 128MB + Option 256MB/512MB
- ROM : 16MB
- EEPROM : 64kb

• Peripherals :
- USB 2.0
- 10/100 Based N/W (MII Interface Phy Chip Used)

• I/O :
- Digital I/O Port : Basic I/O, PWM : Motor & HVPS Control
- UART : Debug Only
- $I^2C$ : EEPROM & SDRAM & CRUM Interface
- Analog I/O Port (ADC : Sensor Interface, DAC : LD Power Control)

## Chorus 3 Architecture

• CPU Core : ARM9266EJS 360Mhz (I-Cache : 16KB, D-Cache : 16KB)

• SDRAM Controller : 4 bank DDR1 SDRAM and 4 & 8 bank DDR2 SDRAM
(DDR2 2DIMM Used, 166MHz), 120Mhz System Bus

• ROM Controller : 2 Banks ( 1 Bank Used)

• I/O Controller : 4 Channel

• DMA Controller : 3 Channel

• HPVC : 4 Channel Dual / Single Beam

• UART : 4 Channels (Debug, OPE 2 Channel used )

• Interrupt : 4 External, 64 Internal

• TIMER : 6 System Timer

## Mips + SPGPXm Architecture

• CPU : Mips IV 533Mhz (I-Cache : 16KB, D-Cache : 16KB, Secondary-Cache : 256KB)

• SDRAM Controller : 4 bank DDR1 SDRAM (2 DIMM Used), 120Mhz System Bus

• ROM Controller : 4 Channel NOR, 1Channel NAND ( 1 Channel NOR Used)

• I/O Controller : 6 Channel

• DMA Controller : 4 Channel

• HPVC : 4 Channel Dual / Single Beam

• UART : 5 Channels (Debug, OPE 2 Channel used)

• Interrupt : 10 External

• TIMER : 6 System Timer

## Memory Interface

• ROM :
- Nor Flash used (16MB)
- Interface With Chorus 3/SPGPXm ROM Controller

• SDRAM :
- Size : CLP-610ND(DDR2) : Default 128MB (Option 128MB/256MB)
CLP-660N/660ND(DDR1) : Default 128MB (Option 256MB/512MB)

• EEPROM :
- Size : 64kb
- Interface With Chorus 3/SPGPXm I2C Controller

• CRUM :
- Size : 256Byte
- Interface With Chorus M I2C Controller via Deve Joint B'D

## I/O Interface

• High Speed USB 2.0 (High speed 480Mbps / Full speed 12Mbps)

• N/W Embedded
- Chorus 3/SPGPXm With MII Interface
- Active LED(Yellow) / Link LED(Green)

• PWM
- High Voltage Control With Duty
- Main Motor Clock

• I2C Interface
- NVRAM (system information + network information)
- CRUM

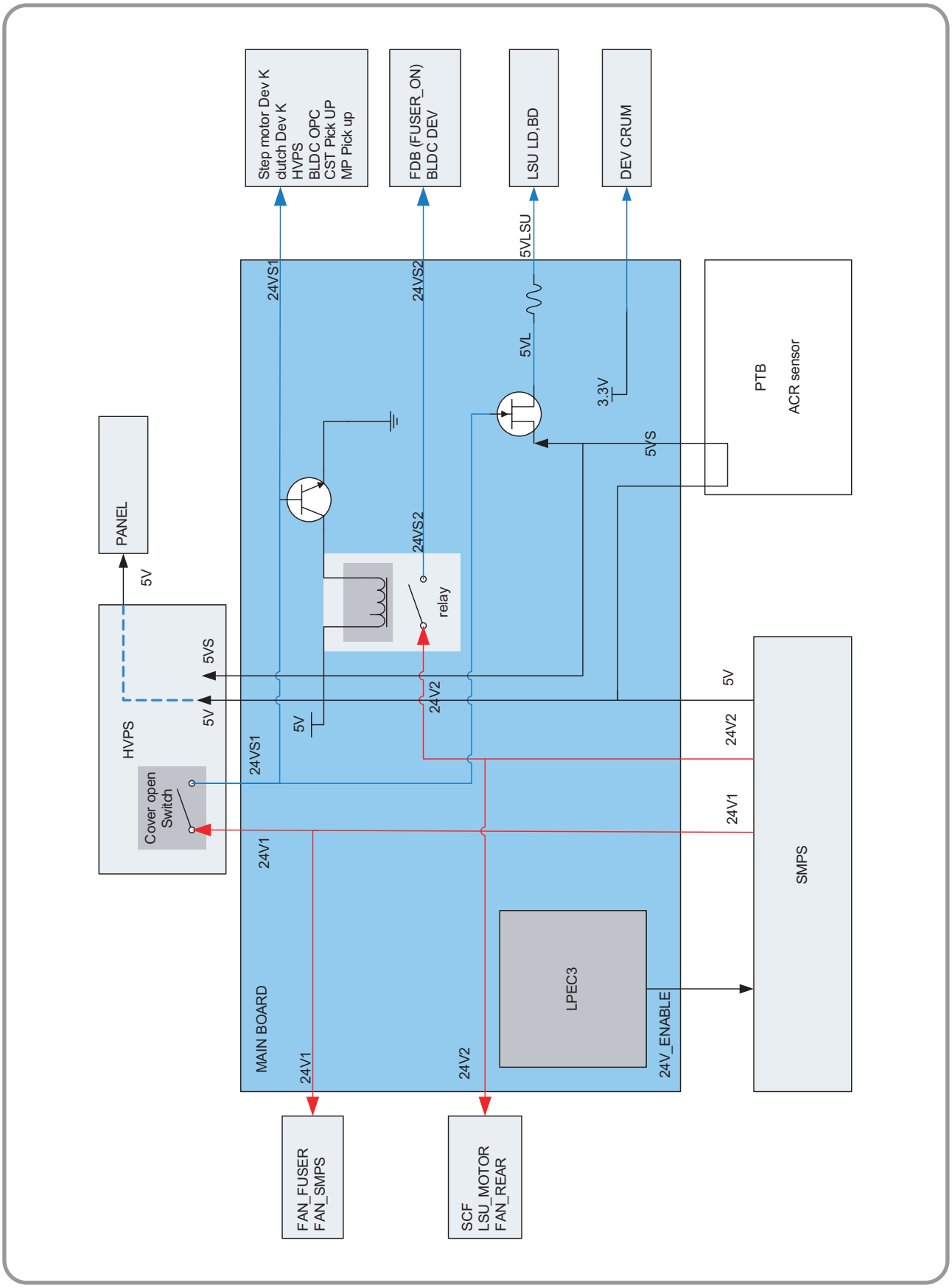
## 2.2.2.2 Power Flow

• SMPS
- Type IV (standard type)
- +24V : For use Mechanical Part (Motor & Actuator (Solenoid, Clutch))
- +5V : Logic, Analog, Sensor,

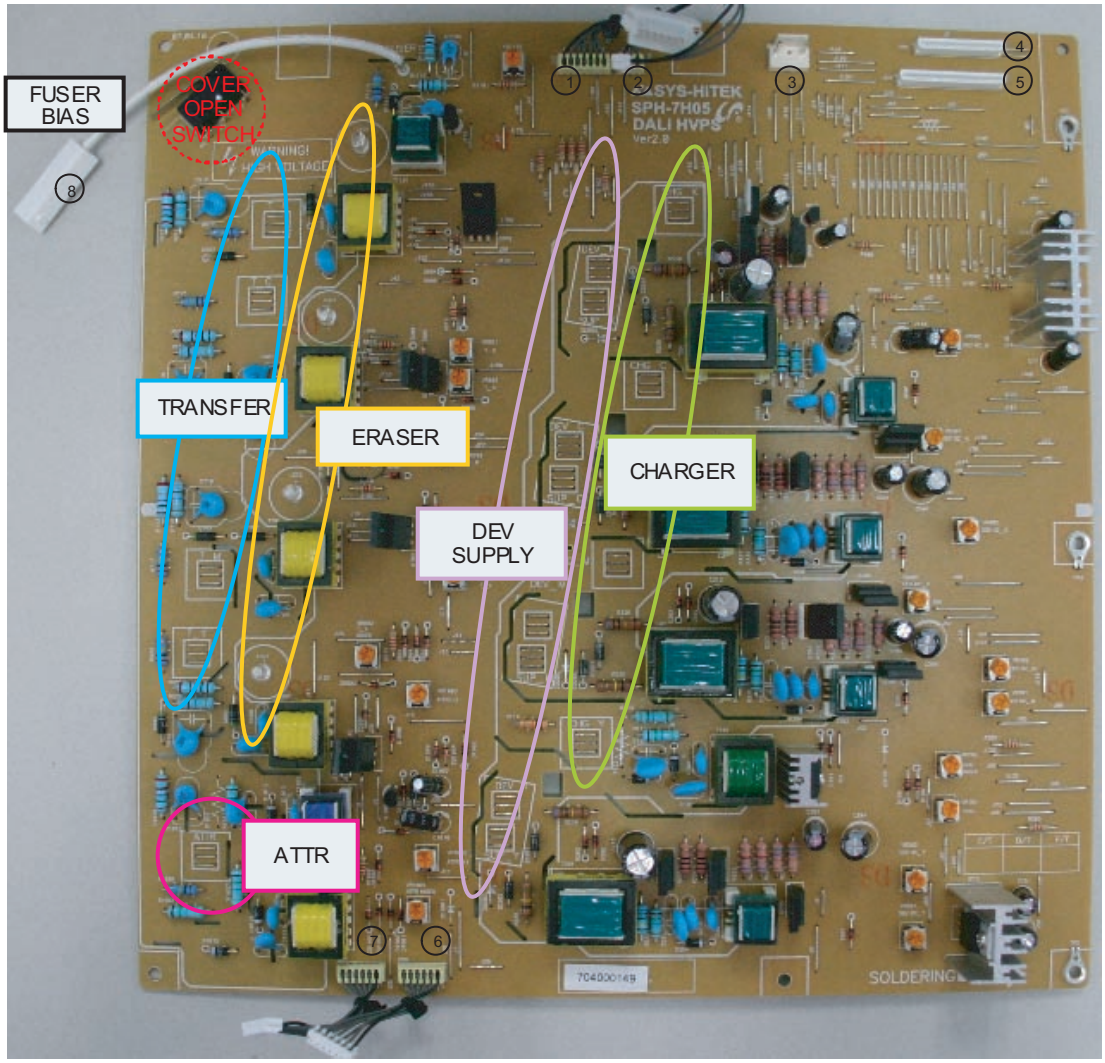
• Main B'D
- Supply From SMPS +5V
- Power Supply with Regulator (3.3V & 1.2V & 1.0V : Switching Regulator)
- 3.3V : I/O Operating (Digital & Analog)
- 1.0V : Chorus 3 Core Voltage
- 1.2V : SPGPXm Core Voltage

• HVPS
- High Voltage Source for EP Condition
- Supply From SMPS +24V
- Controlled By PWM Pulse & I/O

## Power Flow CLP-660N/660ND/610ND



## 2.2.2.3 HVPS

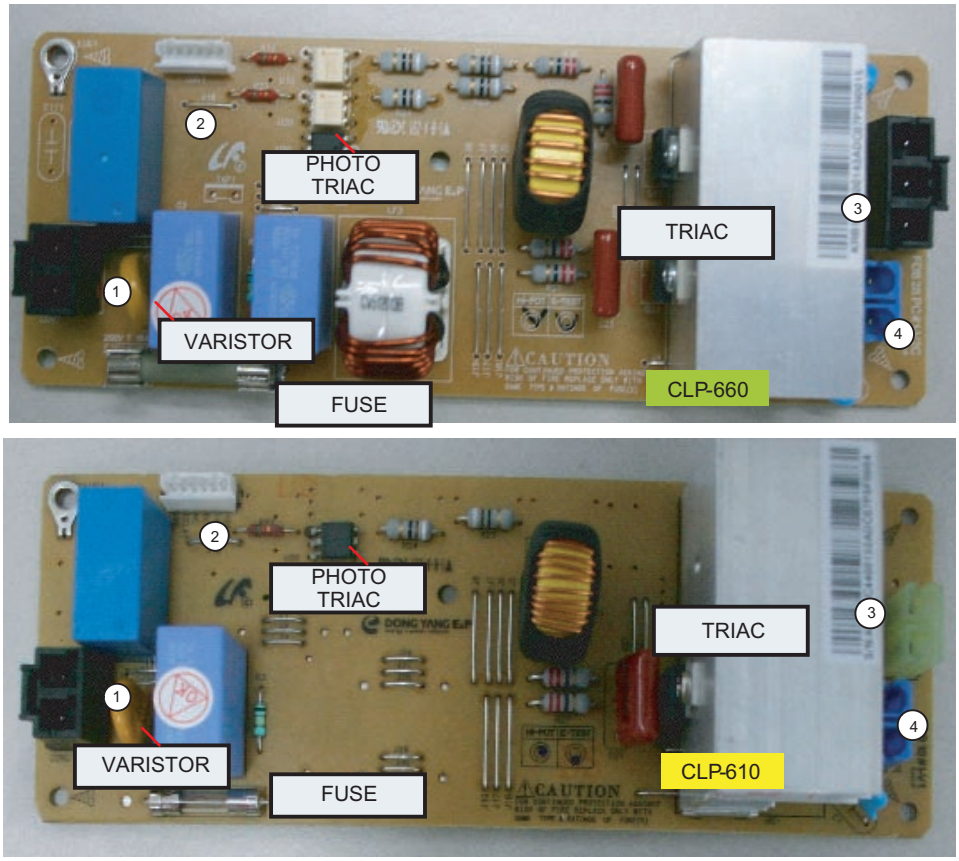



Charger : 1channel
DEV AC : 4channel
Supply DC : 4channel
ATTR+ : 1channel
ATTR- : 1channel
Transfer : 4channel
Fuser Bias : 1channel

| | |
|---|---|
| 1 | PANEL |
| 2 | EXIT SENSOR |
| 3 | 24V SWITCH |
| 4 | HVPS1(form mainboard) |
| 5 | HVPS2(form mainboard) |
| 6 | Feed, CST empty sensor |
| 7 | MP solenoid, MP empty, CST detect |
| 8 | Fuser bias |

| Output | Input Duty (EDC mode display) | Output Voltage/Current | Load | Read voltage (ADC) | Tolerance |
|---|---|---|---|---|---|
| CHARGER Y,M,C,K | 169(66%) | -1170V | 200M | - | 3% |
| SUP DC Y,M,C,K | 100(39%) | -295V | 68pF | - | 3% |
| DEVE AC Y,M,C,K | AC freq2.6kHz<br>AC PWM 92(36%)<br>AC Vpp PWM 65(25%) | 174.0V<br>(about 1740V)<br>[ AC JIG ] | 68pF | - | 1.5% |
| Transfer_Y,M,C,K | 97(38%) | 14uA | 90M | 1.7V (132) | 3% |
| ATTR | 108(42%) | 950V | 100M | 0.6V (46) | 3% |
| ATTR[-] | on | 350V | 25M | - | 15% |
| Fuser Bias | 128(50%) | 300V | 100M | - | 3% |
| Eraser Y,M,C,K | 100(39%) | on/off (18mA ±3mA) | - | - | |

## 2.2.2.4 Fuser Drive Board




**CLP-660**

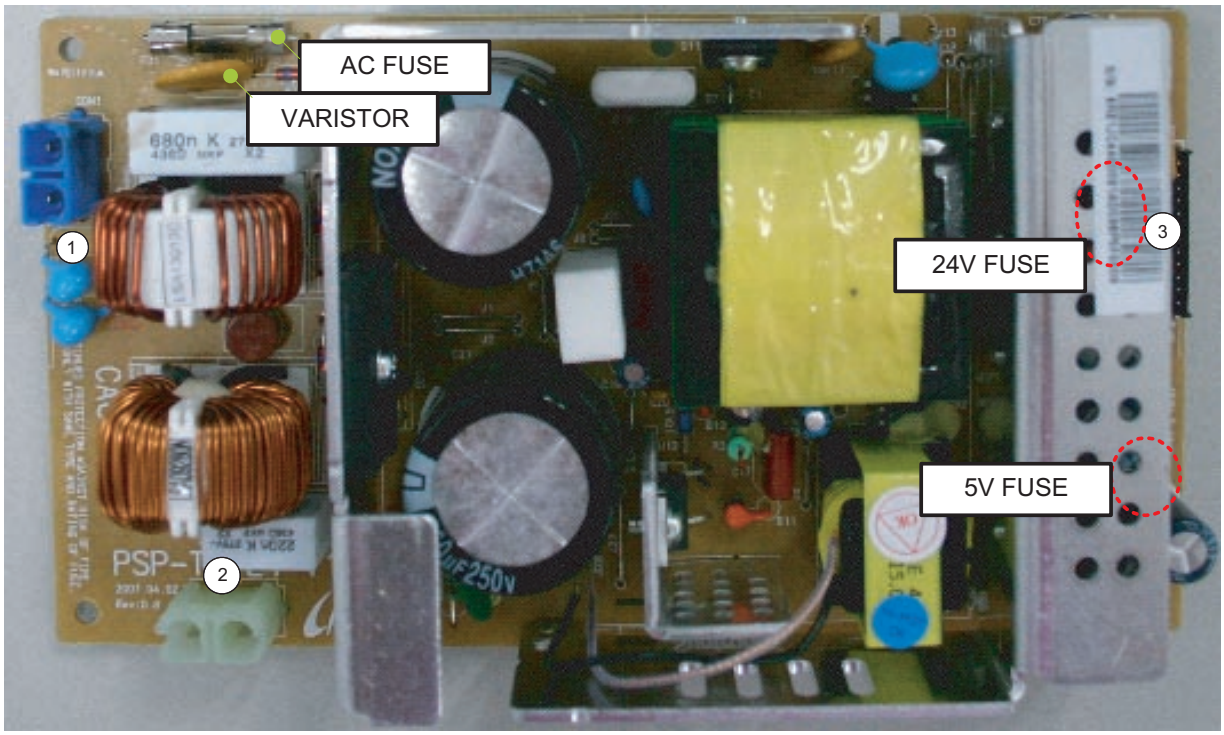
- Zero crossing signal detect
- 2 lamp (800W+500W) Phase control

**CLP-610**

- Zero crossing photo triac
- 1 lamp (800W) Pulse control

| | |
|---|---|
| 1 | **INLET AC** |
| 2 | **FUSER CONTROL (from Main board)** |
| 3 | **FUSER AC (to Fuser lamp)** |
| 4 | **SMPS AC ( to SMPS)** |

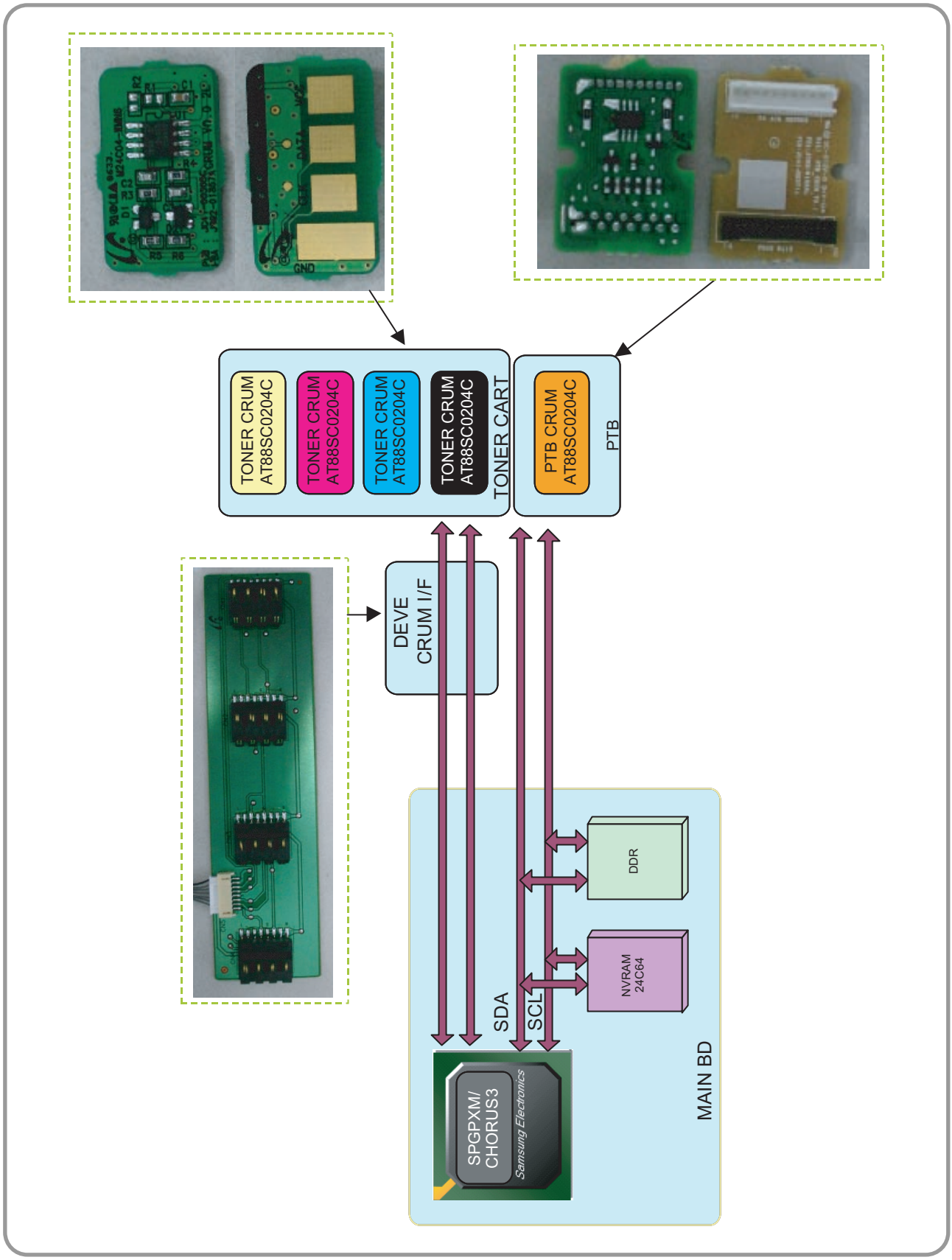
## 2.2.2.5 SMPS




**SMPS : TYPE4**
**INPUT : V1-AC 110V, V2-220V**
**OUTPUT : 24V, 5V**

| | |
|---|---|
| 1 | AC from FDB |
| 2 | NC (not used) |
| 3 | 24V,5V to main board |

## 2.2.2.6 CRUM Interface



# 3. Disassembly and Reassembly

## 3.1 Precautions when replacing parts

### 3.1.1 Precautions when assembling and disassembling

* Use only approved Samsung spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct. Failure to do so could result in damage to the machine, circuit overload, fire or electric shock.

* Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

* Take care when dismantling the unit to note where each screw goes. There are 19 different screws. Use of the wrong screw could lead to system failure, short circuit or electric shock.

* Do not disassemble the LSU unit. Once it is disassembled dust is admitted to the mirror chamber and will seriously degrade print quality. There are no serviceable parts inside.

* Regularly check the condition of the power cord, plug and socket. Bad contacts could lead to overheating and firfe. Damaged cables could lead to electric shock or unit malfunction.

### 3.1.2 Preautions when handling PBA

Static electricity can damage a PBA, always used approved anti-static precautions when handling or storing a PBA.

**>> Precautions when moving and storing PBA**

1. Please keep PBA in a conductive case, anti-static bag, or wrapped in aluminum foil.
2. Do not store a PBA where it is exposed to direct sunlight.

**>> Precautions when replacing PBA**

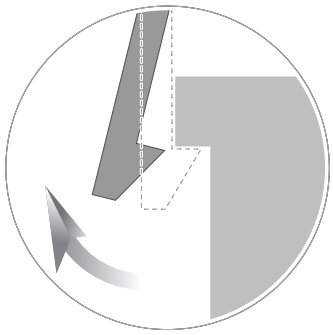
1. Disconnect power connectors first, before disconnecting other cables
2. Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.

**>> Precautions when checking PBA**

1. Before touching a PBA, please touch other grounded areas of the chassis to discharge any static electrical charge on the body.
2. Take care not to touch the PBA with your bare hands or metal objects as you could create a short circuit or get an electric shock. Take extra care when handling PBAs with moving parts fitted such as sensors, motors or lamps as they may get hot.
3. Take care when fitting, or removing, screws. Look out for hidden screws. Always ensure that the correct screw is used and always ensure that when toothed washers are removed they are refitted in their original positions.

### 3.1.3 Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.
To remove such parts, press the hook end of the latch away from the part to which it is latched.



## 3.2 Parts for Maintenance and Repair

### 3.2.1 Replacement interval for parts with a limited life

Some of the parts in this printer have a limited life, shorter than that of the whole machine. These parts must be replaced periodically.
The table below shows the interval at which these parts should be replaced.
The table shows the life of each part, and is measured when using A4 paper. When servicing a machine always check the status of these parts using the control panel and ensure that parts are replaced at the appropriate times otherwise a general degradation in print quality will occur.

| Item(s) | Pages Printed | Part number | Remark |
|---|---|---|---|
| Black toner cartridge | Approx.Initial : 2500 Pages | CLP-K660A (Black) | User Replacement |
| | Sales : 5500 Pages | CLP-K660B (Black) | |
| Color toner cartridge | Approx.Initial : 2000 Pages | CLP-C660A(Cyan) | |
| | | CLP-M660A(Magenta) | |
| | | CLP-Y660A(Yellow) | |
| | Sales : 5000 Pages | CLP-C660B(Cyan) | |
| | | CLP-M660B(Magenta) | |
| | | CLP-Y660B(Yellow) | |
| PTB | Approx. 50,000 black pages or 50,000 color pages | CLP-T660A<br>CLP-T660B(with duplex unit) | |
| Pick-up roller | Approx. 70,000 Pages | | Engineer Replacement |
| Fuser Unit | Approx. 100,000 black pages or 100,000 color pages | | |

## 3.2.2 Printer Cleaning

A printer should be regularly cleaned, especially if it is used in a dusty environment. This will ensure that print quality remains high and failure due to contamination of printing services is less likely to occur.

* Clean the printer with a soft, lint free, cloth dipped in a "Recommended cleaner" "Recommended cleaner" can be purchased from our service center. (where available)

* Do not touch the transfer roller when cleaning the inside of the printer. Grease and oils from the skin will contaminate the surface and reduce print quality.

* Do not touch transfer roller when cleaning inside of machine. If transfer roller gets dirty, printing quality could be low.

* Please refer to the User Manual for cleaning instructions.

# 3.3 Information Related to Disassembly and Assembly.

## 3.3.1 Special service parts

Never disassemble or adjust the items mentioned, a stock of these items should be maintained.

### 1) Disassembly of the LSU unit

There are no serviceable parts inside the LSU. Alignment of the mirrors is critical. Opening the LSU will allow dust into the laser and significantly reduce print quality. It is very dangerous to operate or service a machine with the LSU open or system interlocks disabled. Exposure to laser radiation can cause blindness.

### 2) Disassembly of the PTB unit

Do not disassemble the PTB. The alignment of the home sensor is critical and is set up in the factory on a special jig. Incorrect re-assembly will cause print quality degradation.

### 3) Care of the Toner cartridge

Toner cartridges contain an extremely fine powder. Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor. Take care not to spill toner - spillages should be cleaned with a vacume cleaner and washed in could water (hot water sets the toner). Do not touch the developer roller surface as contamination will reduce print quality. Take care not to damage the roller's surface when installing or removing a toner cartridge.

### 4) Disassembly of DEVE drive ass'y and the main drive ass'y

The alignment of the drive mechanism is critical and it has been set up in factory using a jig and a driving gear. It is adjusted for the best gearing alignment. If the motor is disassembled alignment would not be maintained and this could cause operational noise and image problems: image alignment and toner distribution may be affected.

### 5) Disassembly of terminal parts

Do not adjust the variable resistors on the PBA. They have been already adjusted in the factory.

### 6) Disassembly of the fuser unit

- The fuser melts toner onto the paper at a high temperature: therefore, you need to take special care not to get burned by a hot fuser. When removing the fuser from a set that has recently been operating you need to take extra care.
- Do not touch an AC line (Copper contact) on a main frame even after removing the fuser.

# 3.4 Disassembly Procedure

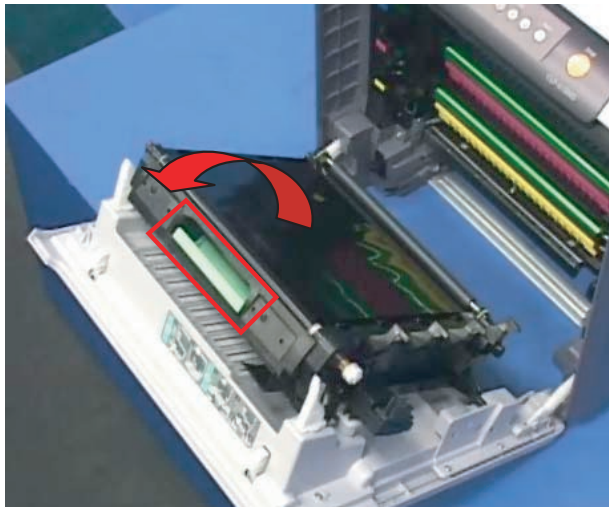
The description of disassembly and reassembly in this manual is listed according to the disassembly procedures.

## 3.4.1 Cover Unit

1. Remove the Cassette Unit.

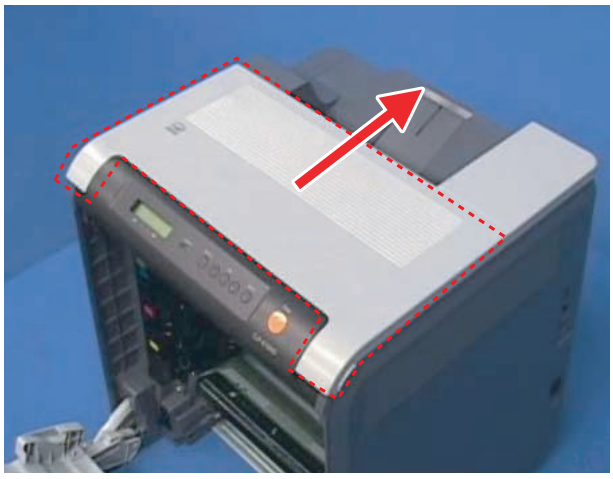
2. Open the front cover.

3. Remove the PTB Unit after pull the handle.

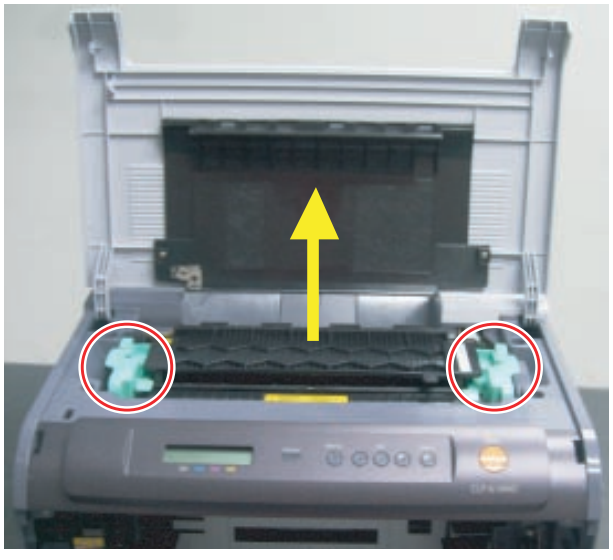


4. Remove the Toner kits

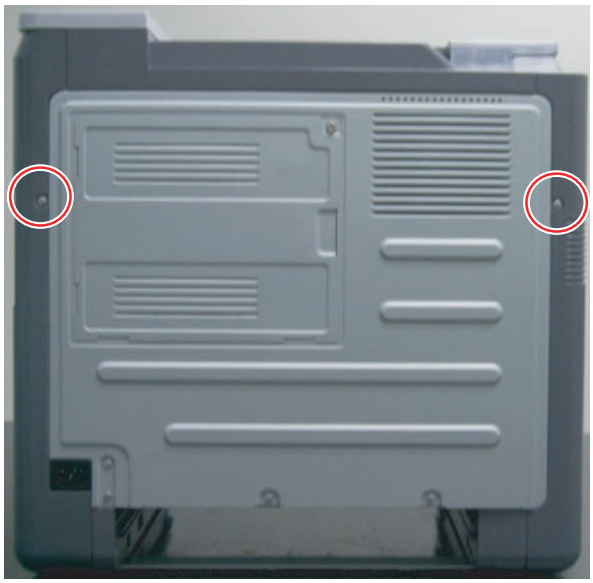
5. Open the top cover.



6. Remove the Fuser unit after push the lever.



7. To remove the side cover, remove the 2 screws from the rear of SET, as shown below.

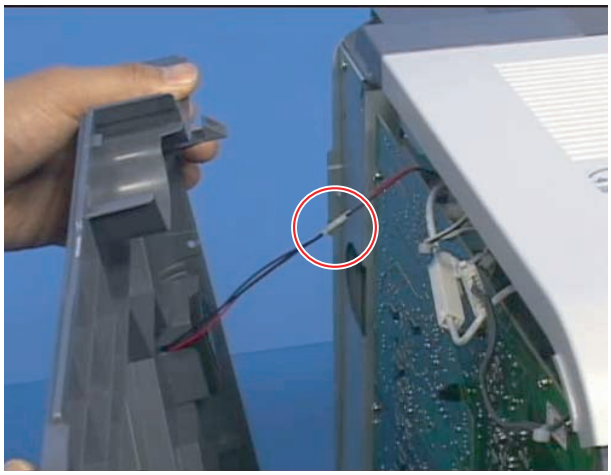


8. To remove the left cover, remove the one screw.

9. Unlatch the 2 hooks from the bottom of SET with any tool.

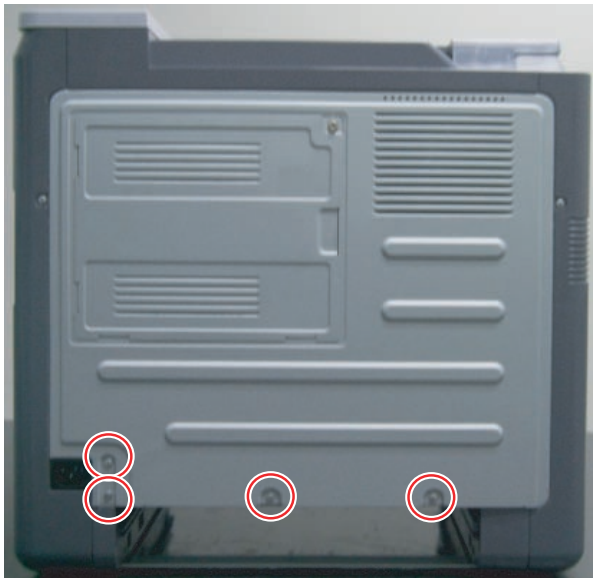
10. Unlatch the hook and remove the left cover.

11. Unplug the fan harness.

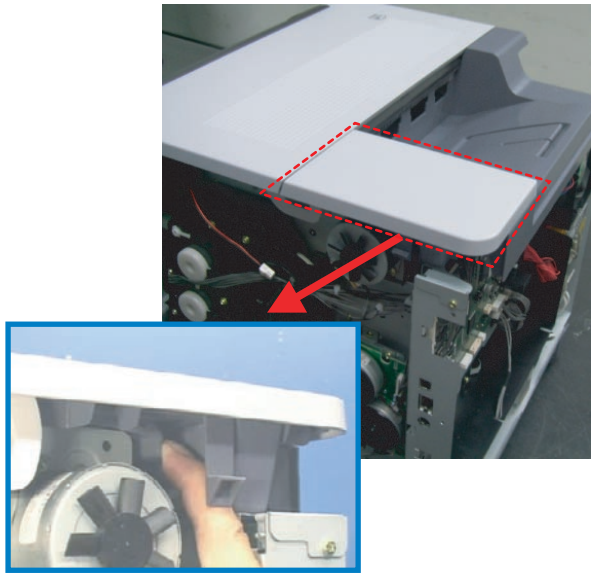


12. In the same way ( procedure 8~10), remove the right cover.

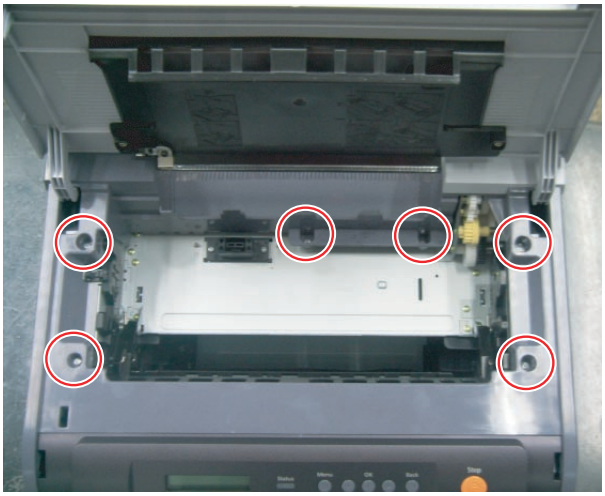
13. Remove the 4 screws, and remove the rear cover.



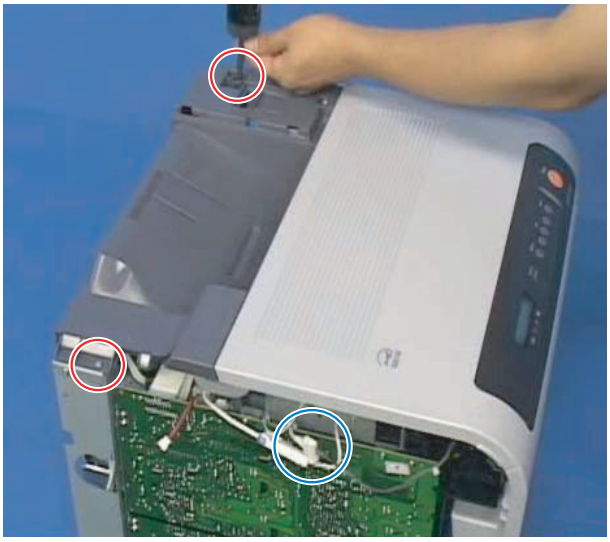
14. Remove the dummy cover after release the lever



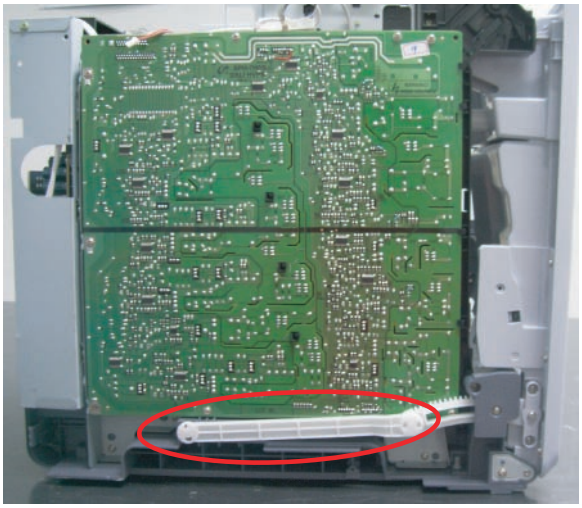
15. Open the top cover, and remove the 6 screws.



16. Remove the top cover after remove the 2 screws and the one connector.

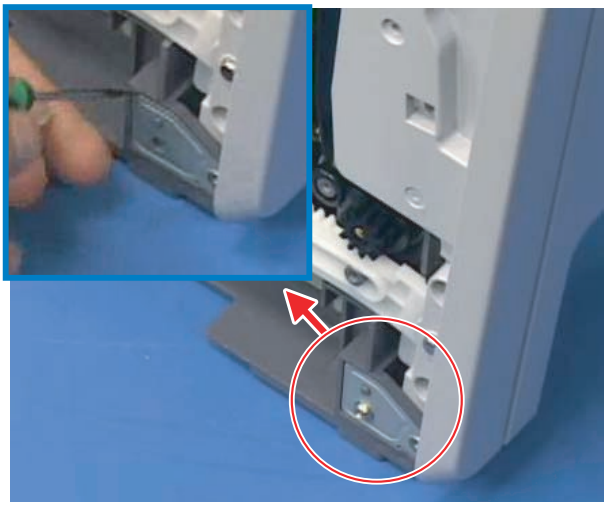


17. Remove the left link.

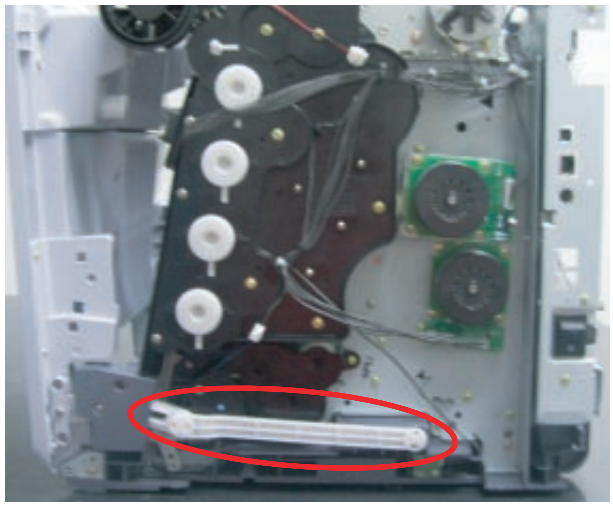


18. Remove the Damper hinge-L after remove the 2 screws.

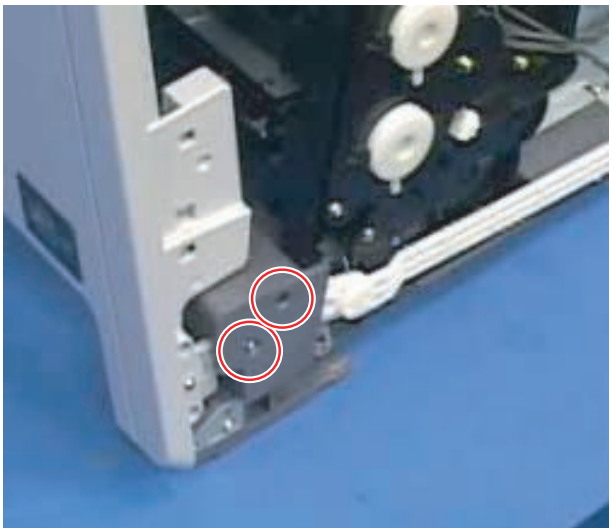
19. Remove the Bracket hinge with any tool after remove one screw.



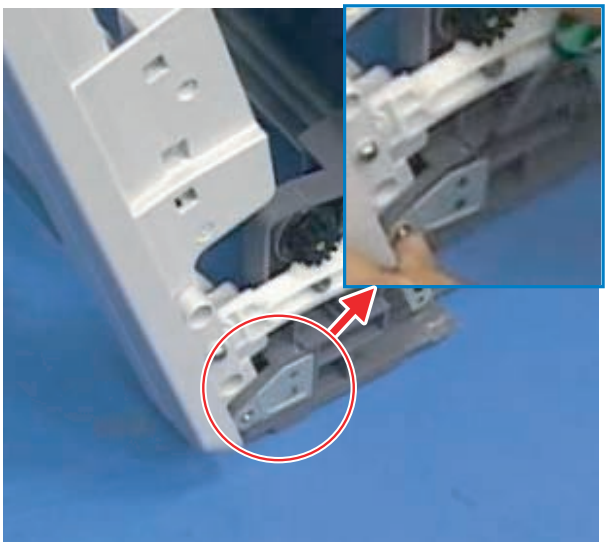
20. Remove the right link.



21. Remove the Damper hinge-R after remove the 2 screws.

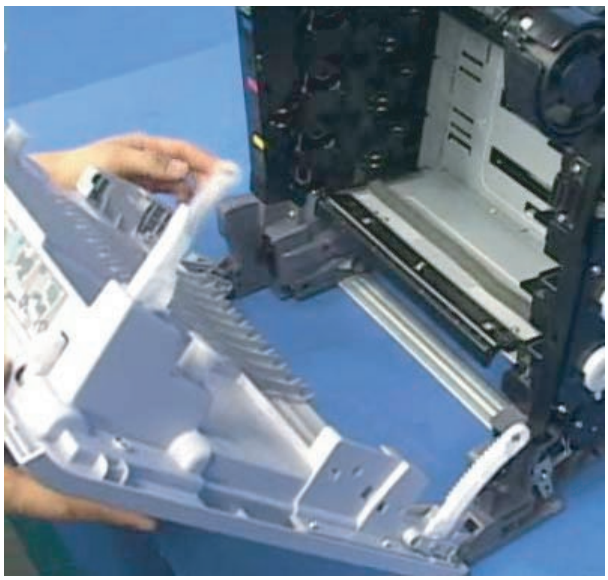


22. Remove the Bracket hinge with any tool after remove one screw.



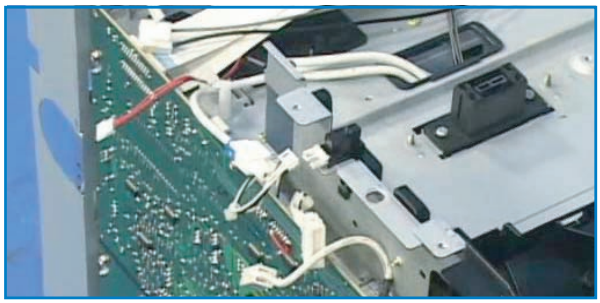
23. Remove the Damper hinge ( 2 EA).

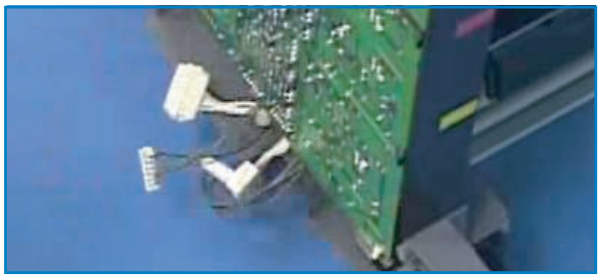
24. Remove the front cover.



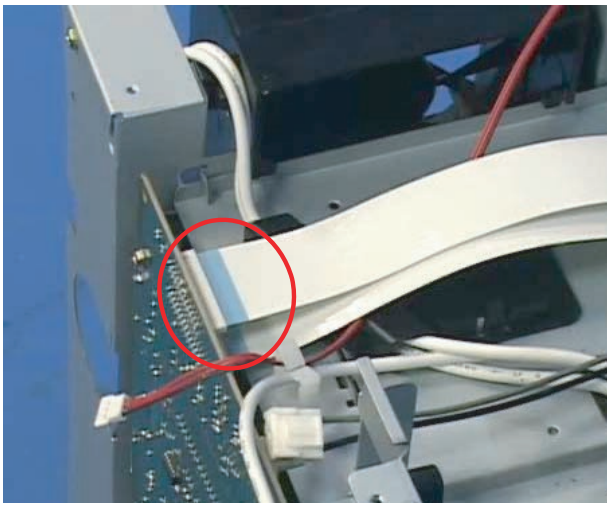
## 3.4.2 HVPS Board

1. Unplug the harness from the top/bottom of the HVPS Board.

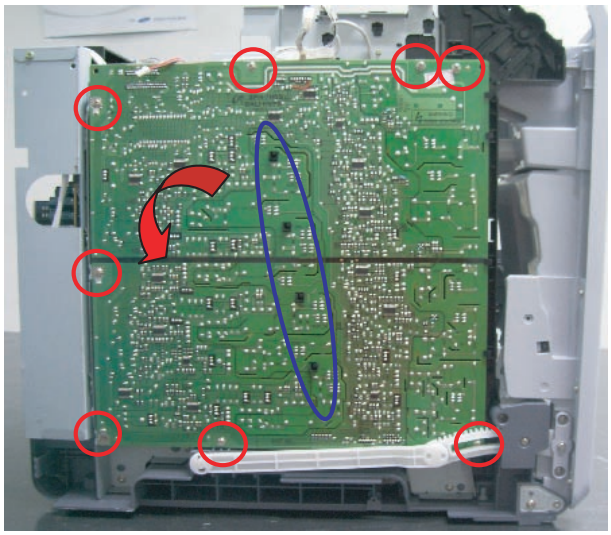




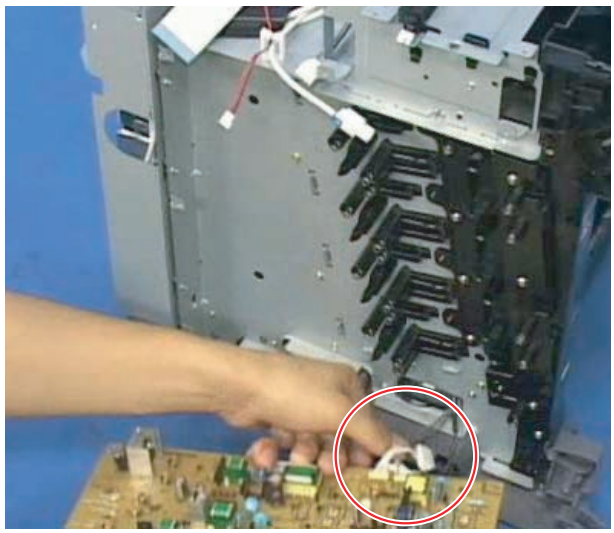
2. Unplug the flat cable (2 EA).



3. Remove the 8 screws and unlatch 4 hook.

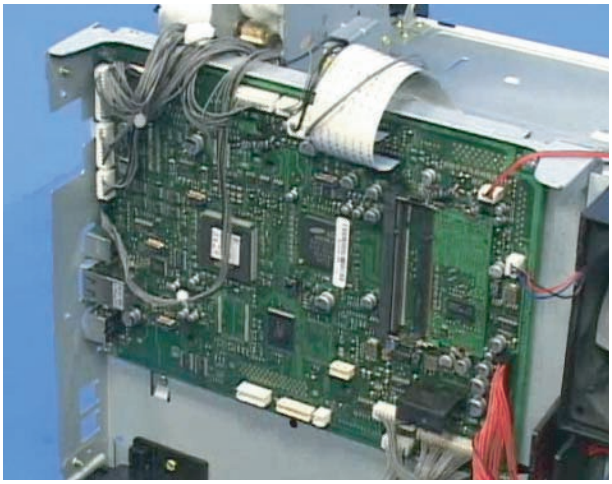


4. Unplug the harness and release the HVPS board.

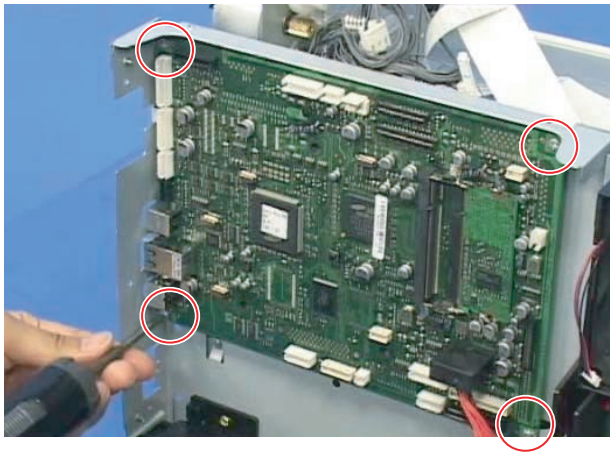


## 3.4.3 Main Board

1. Unplug the connectors and all the harness.



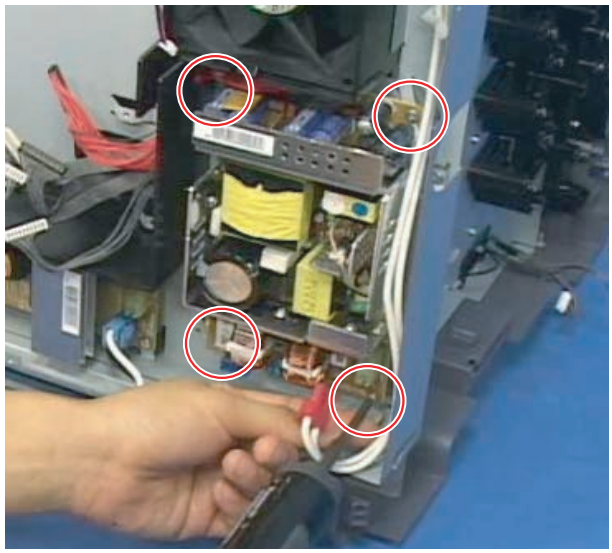
2. Remove the 4 screws.



## 3.4.4 SMPS Board

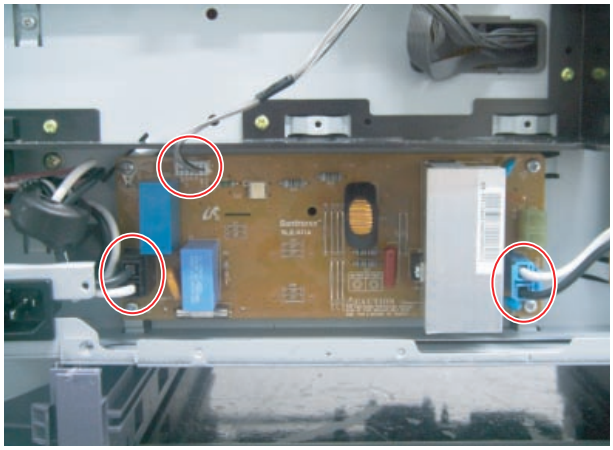
1. Unplug the Harness, as shown below.

2. Remove the 4 screws, and release the SMPS Board from the SET.

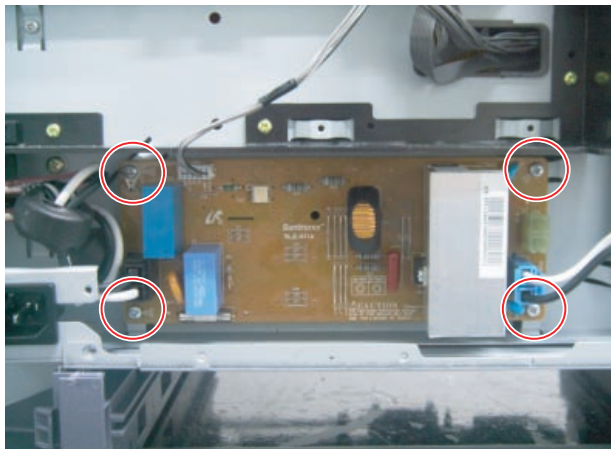


## 3.4.5 Fuser control Board

1.Unplug the Harness.

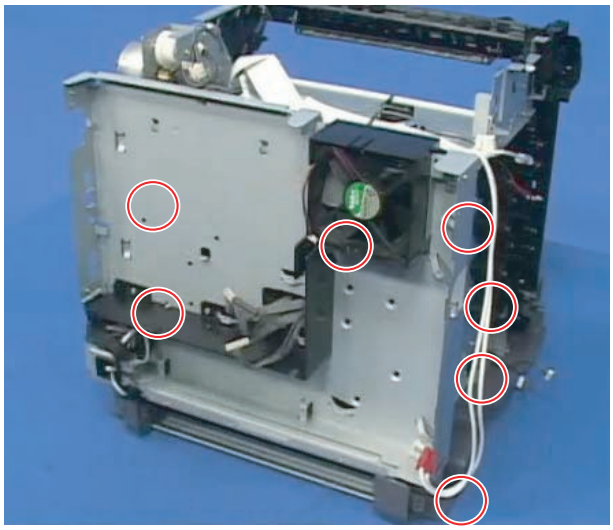


2. Remove the 4 screws, and release the Fuser control board from the SET.

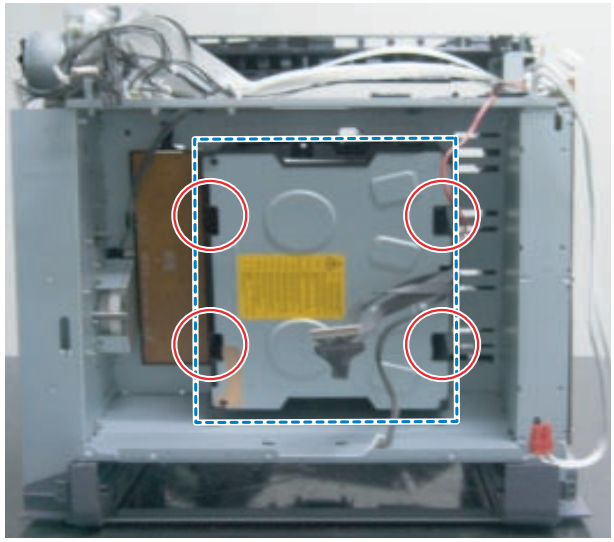


## 3.4.6 LSU Unit

1. To remove the Bracket main & Duct, remove the 7 screws and release it.

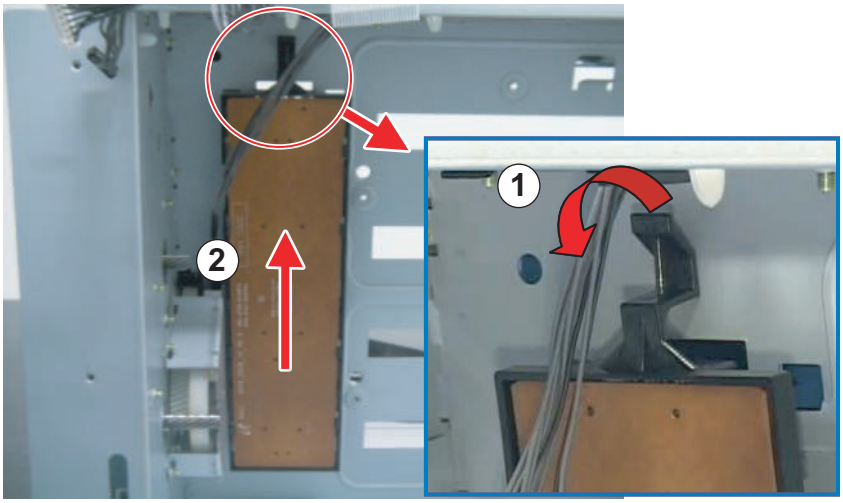


2. Remove the 4 screws and remove the LSU Unit.



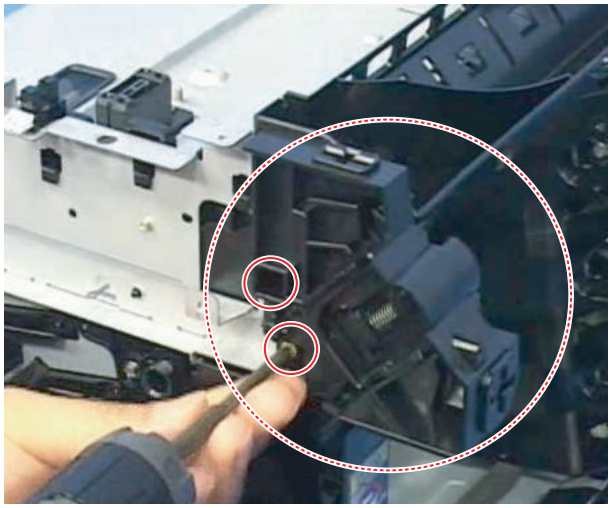
## 3.4.7 CRUM

1. Remove the CRUM after unlatch the lever.

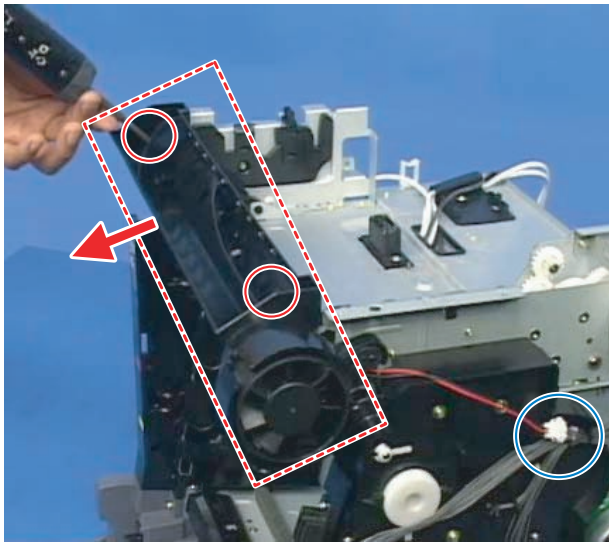



## 3.4.8 Fuser Drive Unit

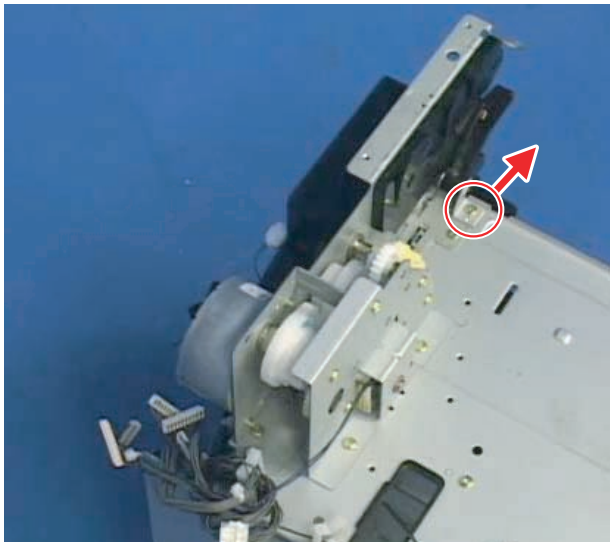
1. Remove the 2 screws and release the MEA UNIT-COVER_OPEN.



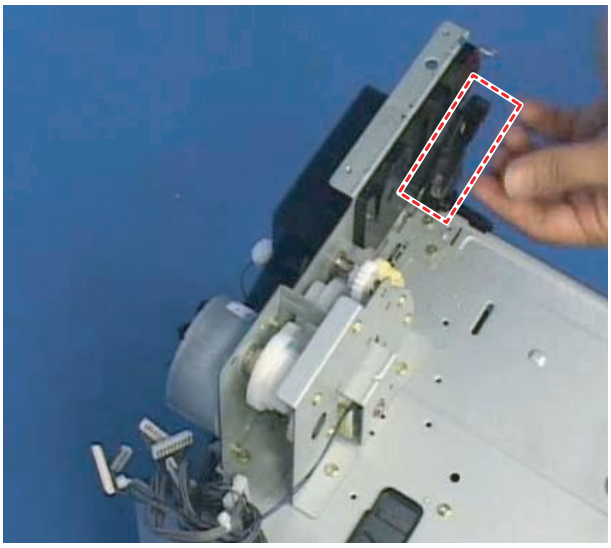
2. Remove the Fuser Duct after remove the 2 screws and the harness.



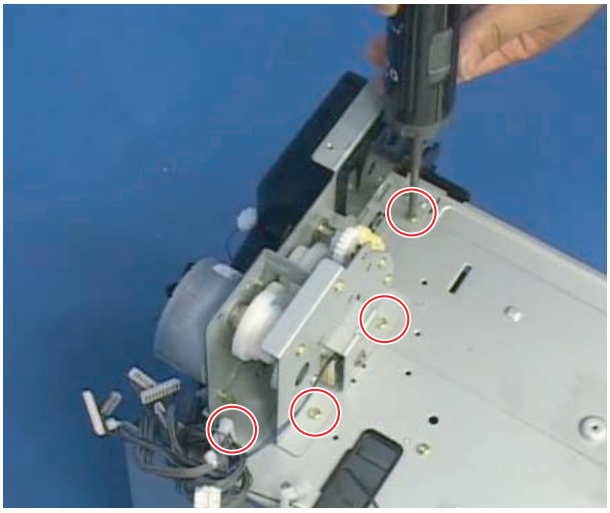
3. Remove the one screw and release the BRACKET-LOCKER PTB R.



4. Remove the LOCKER_PTB R.

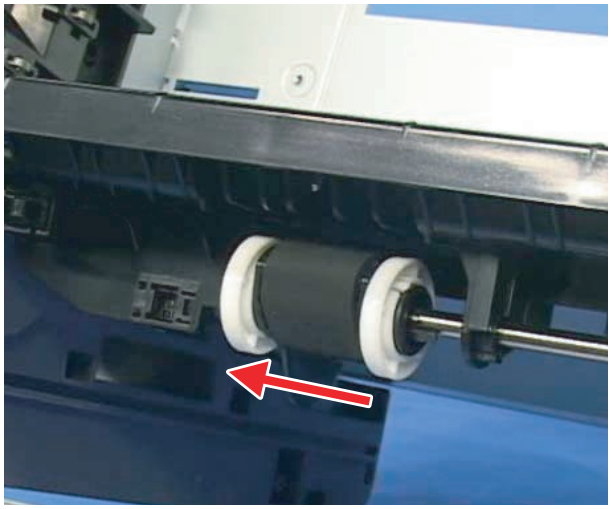


5. Remove the Fuser Drive Unit after remove the 4 screws and the harness.



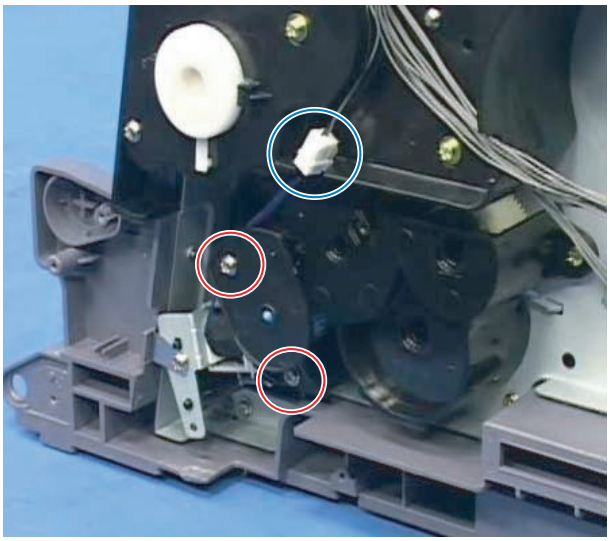
## 3.4.9 Pick-up Roller

1. Remove the Pick up roller.

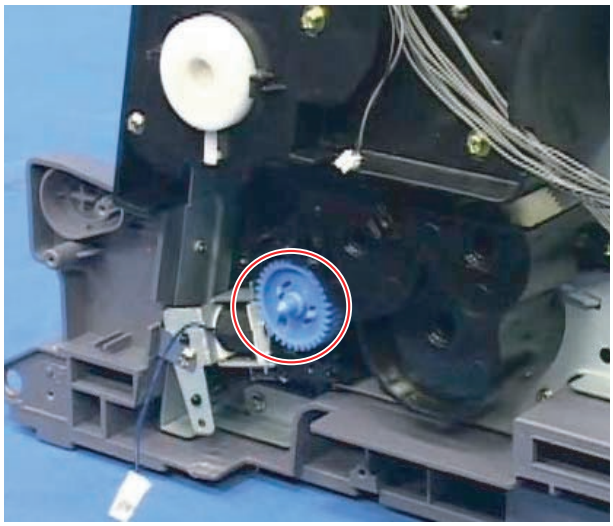


## 3.4.10 Feed Drive

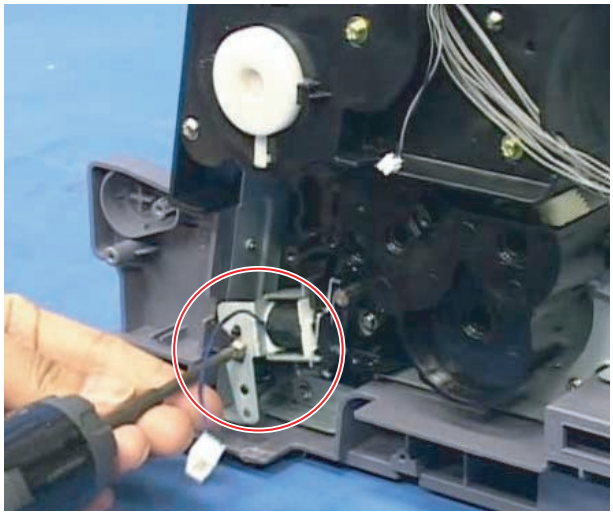
1. Remove the two screws and unplug the harness.



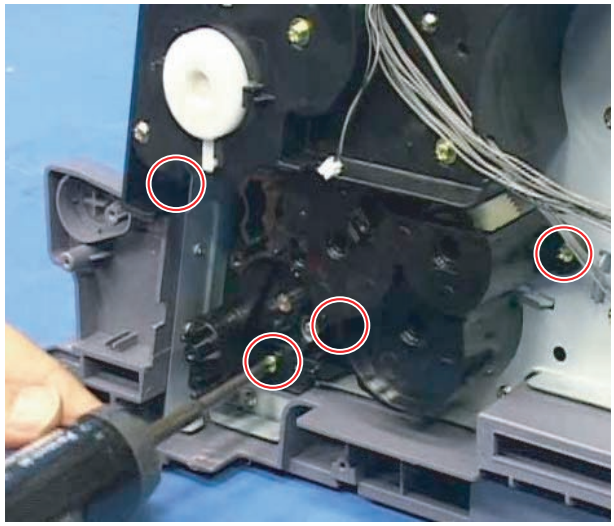
2. Remove the MEA-GEAR PICK UP.



3. Remove the one screw and release the SOLENOID PICK UP.



4. Remove the 4 screws, and then release the MEA UNIT-FEED DRIVE.

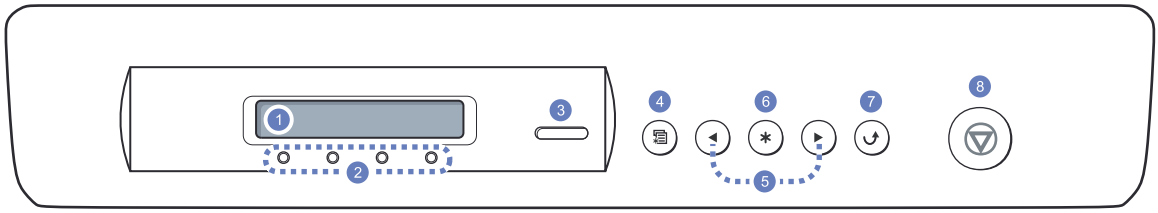


# 4. Adjustment and Troubleshooting

This chapter describes some of the main service procedures including:
Using the Tech mode; Clearing paper jam and test patterns.
- Tips for avoiding paper jams, Clearing paper jams.
- Solving other problems.

## 4.1 Alignment and Adjustments

### 4.1.1 Control Panel




| | |
|---|---|
| 1 | **Display:** Shows the current status and prompts during an operation. |
| 2 | **Toner colors:** The toner colors shown below the LCD display coworks with display messages. |
| 3 | **Status:** Shows the status of your machine. |
| 4 | **Menu:** Enters Menu mode and scrolls through the available menus. |
| 5 | **Left/right arrow:** Navigates available values by moving to the next or previous options. |
| 6 | **OK:** Confirms the selection on the display. |
| 7 | **Back:** Sends you back to the upper menu level. |
| 8 | **Stop:** Stops an operation at any time. |

# 4.1.2 LED Function

The Status LED on the control panel shows the status of your machine.
See the table below to know your machine's status.

| Status" LED | | Description |
|---|---|---|
| Off | | · The machine is off-line.<br>· The machine is in Power Save mode. When data is received, or any button is pressed, it switches to on-line automatically. |
| Green | Blinking | · When the backlight slowly blinks, the machine is receiving data from the computer.<br>· When the backlight fast blinks, the machine is printing data. |
| | On | The machine is on-line and can be used. |
| Red | Blinking | · A minor error occurs and the machine is waiting an error to be cleared. Check the display message.<br>· The toner cartridge is low. Order a new toner cartridge. You can temporarily improve print quality by redistributing the toner. |
| | On | · A problem has occurred such as a paper jam, opened cover or no paper in the tray, so that the machine can not continue the job. Check the message on the display.<br>· The toner cartridge is low, empty, or needs to be installed a new one. See Understanding the toner cartridge messages on the display |

# 4.1.3 Jam Removal

## ■ Clearing paper jams

When a paper jam occurs, Paper Jam appears on the display. Refer to the table below to locate and clear the paper jam.

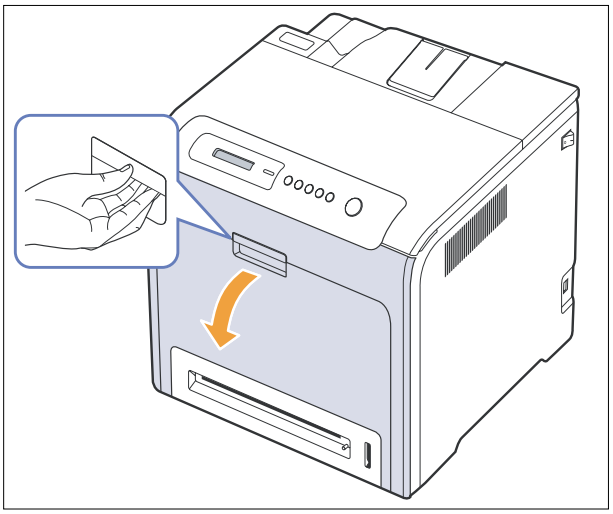
| Message | Location of jam |
|---|---|
| **MP Tray Paper Jam 0** | In the multi purpose tray |
| **Tray 2 Paper Jam 0** | In the optional tray |
| **Paper Jam 1 Open/Close Door** | In the paper feed area and inside the machine |
| **Paper Jam 2 Check Inside** | Inside the machine and in the exit area |

| Message | Location of jam |
|---|---|
| **Duplex Jam 0 Check Inside** | Inside the machine |
| **Duplex Jam 1 Open/Close Door** | In the paper feed area an inside the machine |
| **Duplex Jam 2 Check Inside** | Inside the machine and in exit area |

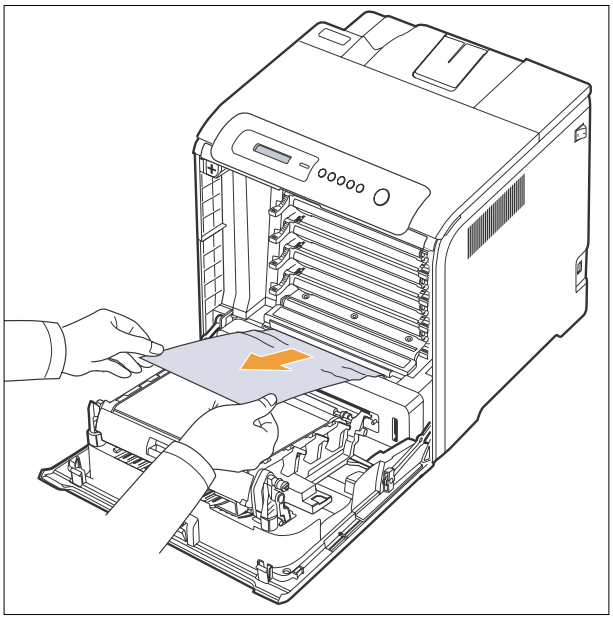
## 4.1.3.1 In the paper feed area

If paper is jammed in the paper feed area, follow the next steps to release the jammed paper.

1. Using the handle, completely open the front cover.



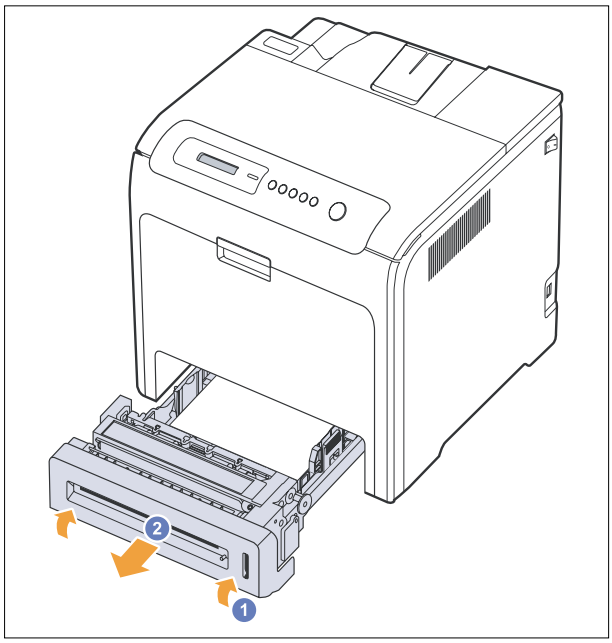
2. Carefully remove the paper by pulling in the direction as shown below.



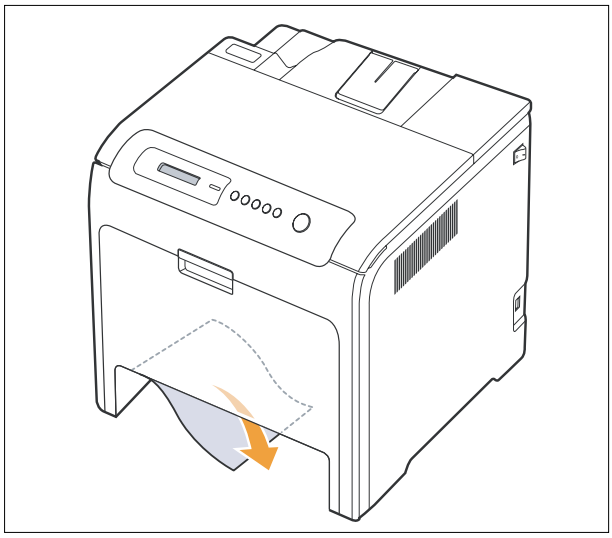
If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling, and go to step 3.

3. Close the front cover.

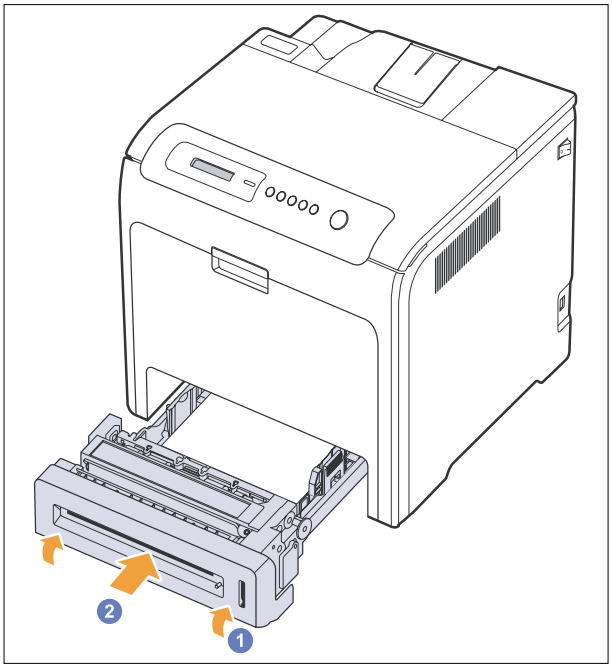
4. Pull the tray open. After you pull it all the way out, lift up the front part of the tray slightly to release the tray from the machine.



5. Remove the jammed paper by gently pulling it straight out as shown below.



6. To replace the tray, lower the rear edge, align it with the slot, and slide it into the machine.



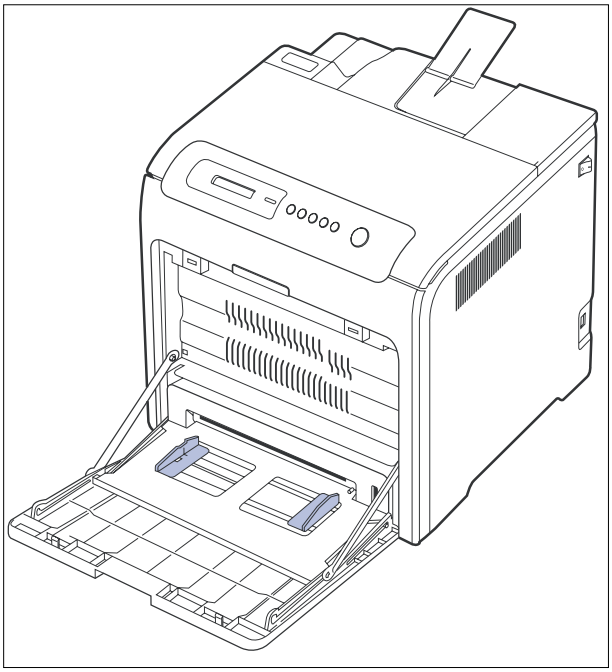
7. After removing the jammed paper, check for paper which may be jammed in other parts of the machine.

8. Close the front cover firmly. The machine will resume printing.

## 4.1.3.2 In the multi-purpose tray

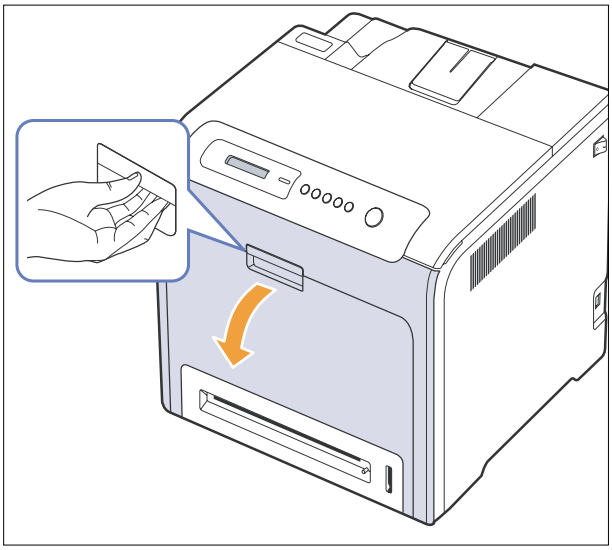
When you print using the Multi-purpose Tray and the machine detects that there is either no paper or the paper has been improperly loaded, follow the next steps to release the jammed paper.

1. Check if the paper is stuck in the feeding area, and if so, pull it out gently and slowly.

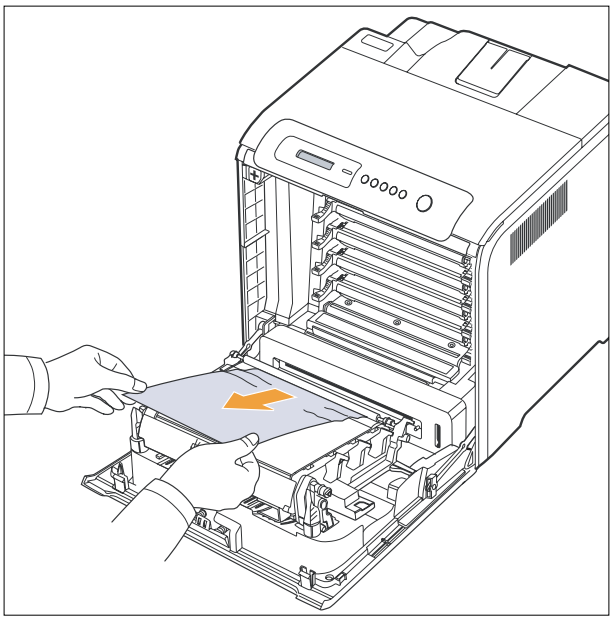


If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to step 2.

2. Using the handle, completely open the front cover.



3. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.

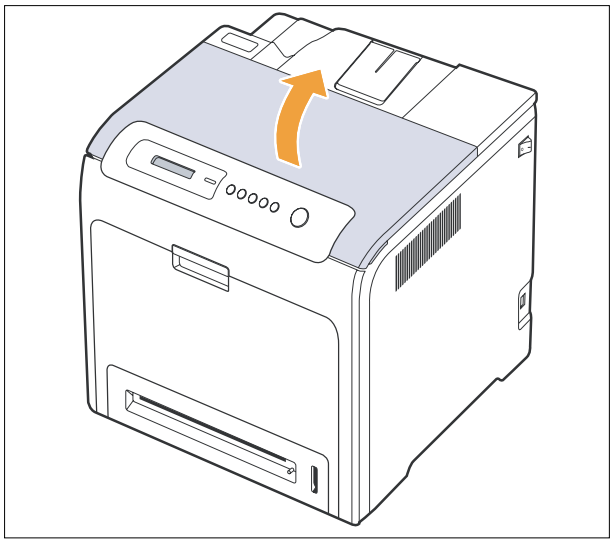


4. Close the front cover firmly. The machine will resume printing.

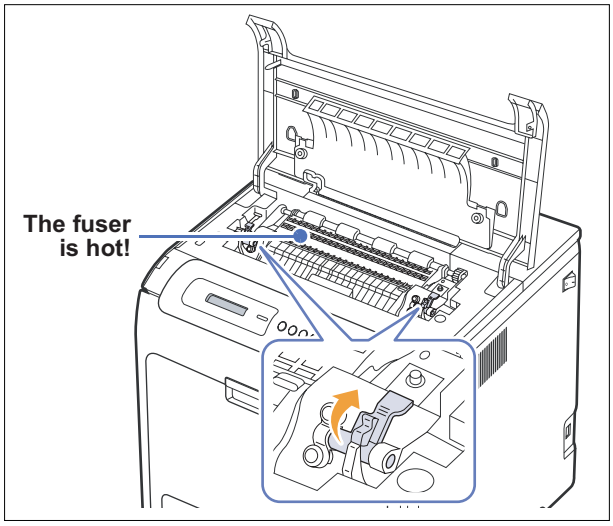
## 4.1.3.3 In the fuser unit area

If paper is jammed in the fuser unit area, follow the next steps to release the jammed paper.

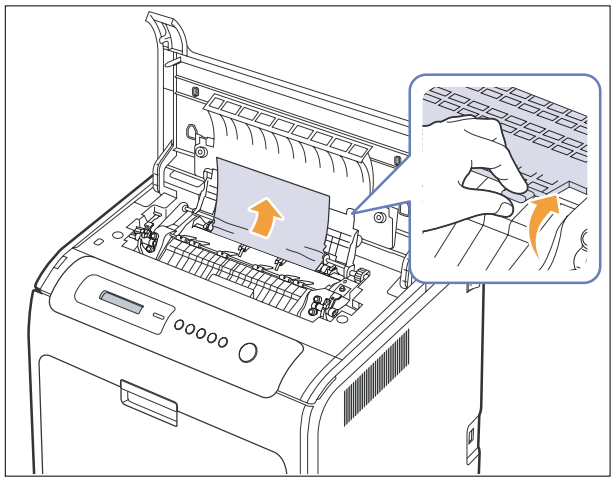
1. Open the top cover.



2. Push the levers up.



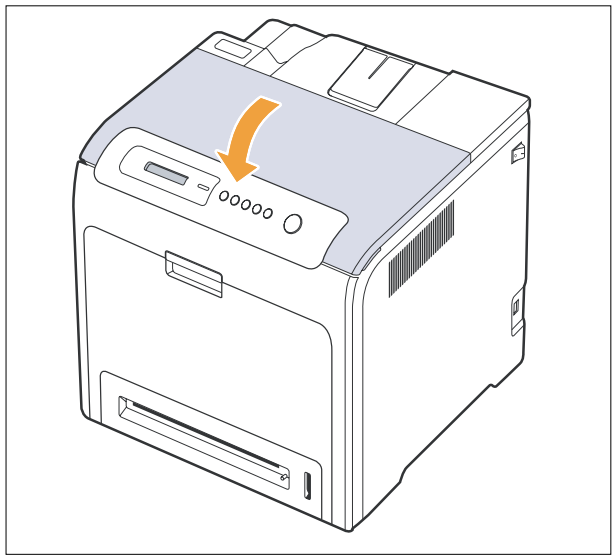

3. Open the inner cover using the handle on it and carefully take the jammed paper out of the machine.



4. Close the inner cover and push the levers down.

5. After removing the jammed paper, check for paper which may be jammed in other parts of the machine.

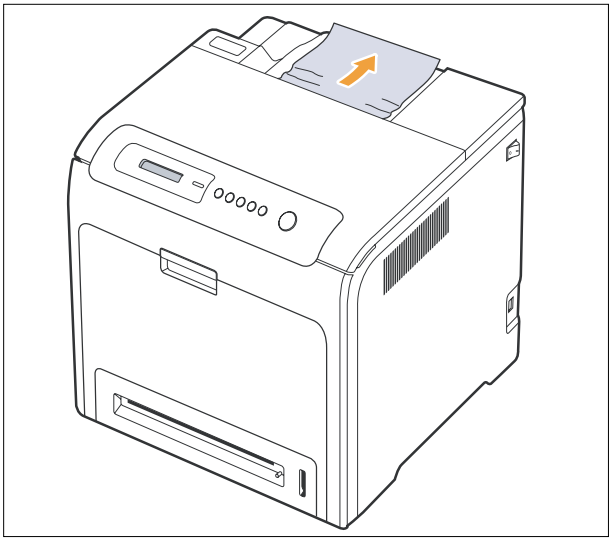
6. Close the top cover. Make sure that it is securely latched.



## 4.1.3.4 In the paper exit area

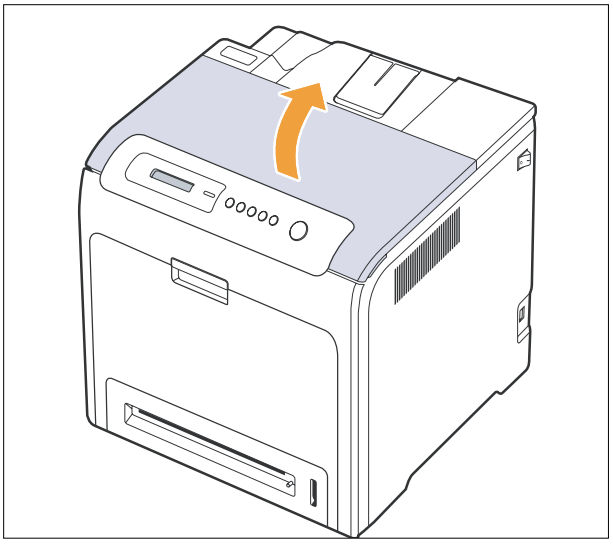
If paper is jammed in the paper exit area, follow the next steps to release the jammed paper.

1. If a long portion of the paper is visible, pull it straight out.
   Open and close the front cover firmly. The machine will resume printing.

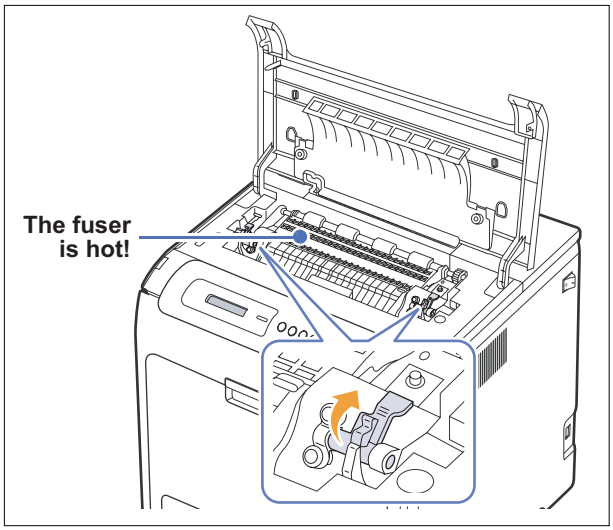


   If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to step 2.

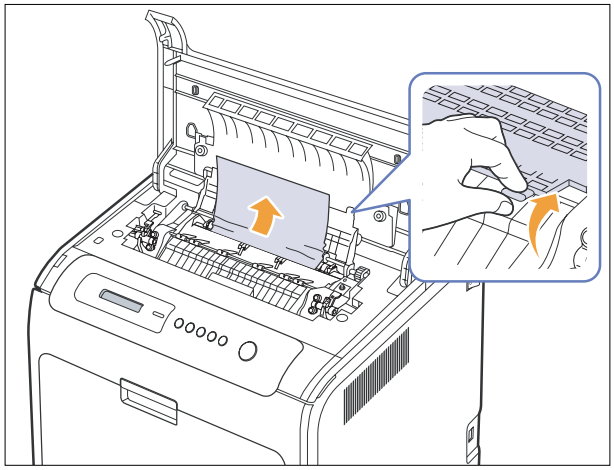
2. Open the top cover.



3. Push the levers up.



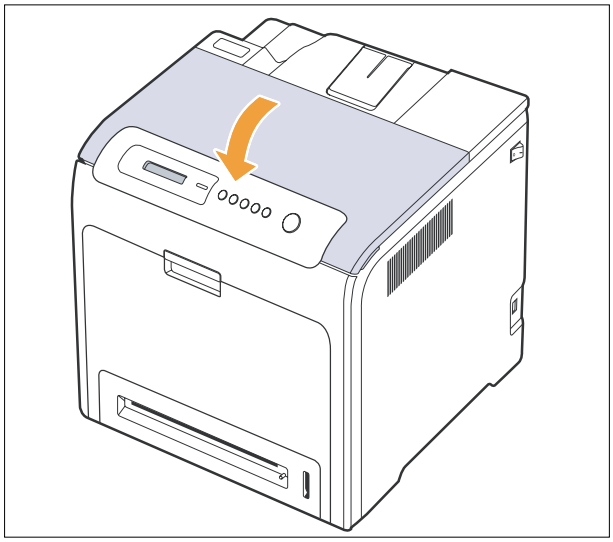

4. Open the inner cover using the handle on it and carefully take the jammed paper out of the machine.



5. Close the inner cover and push the levers down.

6. After removing the jammed paper, check for paper which may be jammed in other parts of the machine.

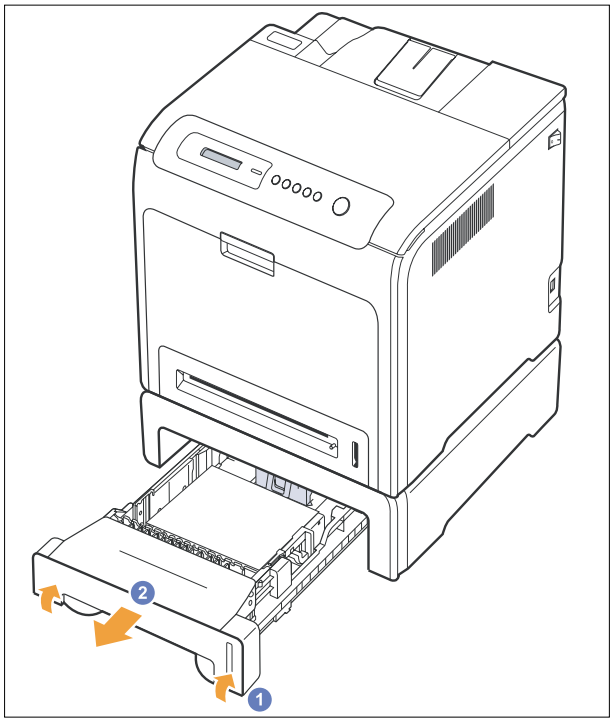
7. Close the top cover. Make sure that it is securely latched.



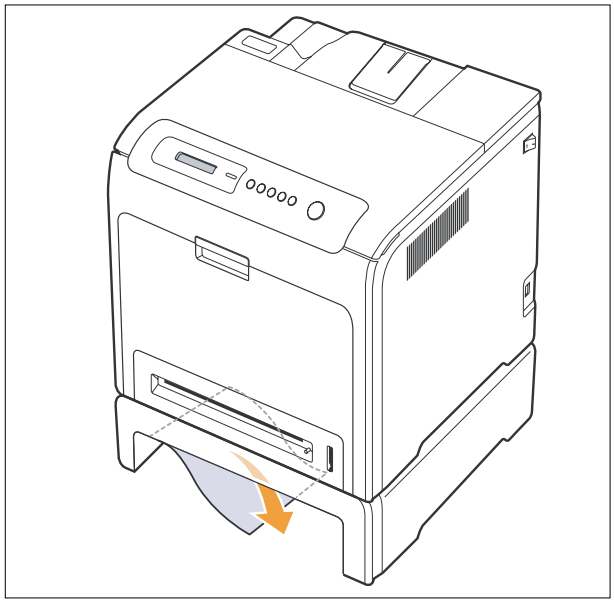
## 4.1.3.5 In the optional tray

If paper is jammed in the optional Tray, follow the next steps to release the jammed paper.

1. Pull the optional Tray open. After you pull it all the way out, lift up the front part of the tray slightly to release the tray from the machine.

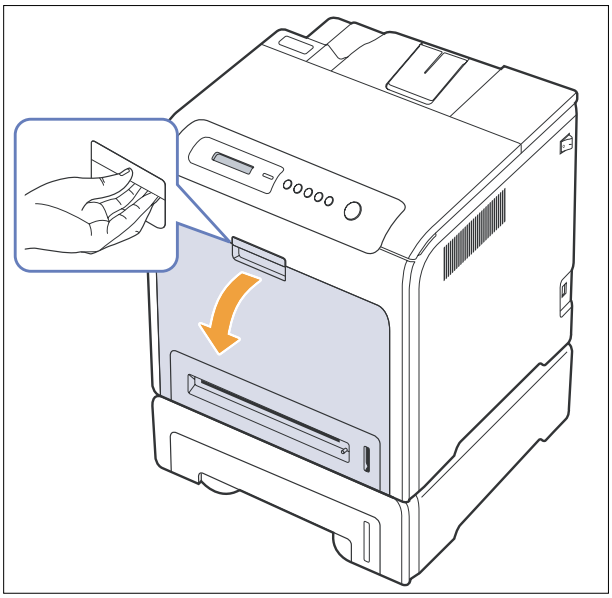



2. If you see the jammed paper, remove the paper from the machine by gently pulling it straight out as shown below.

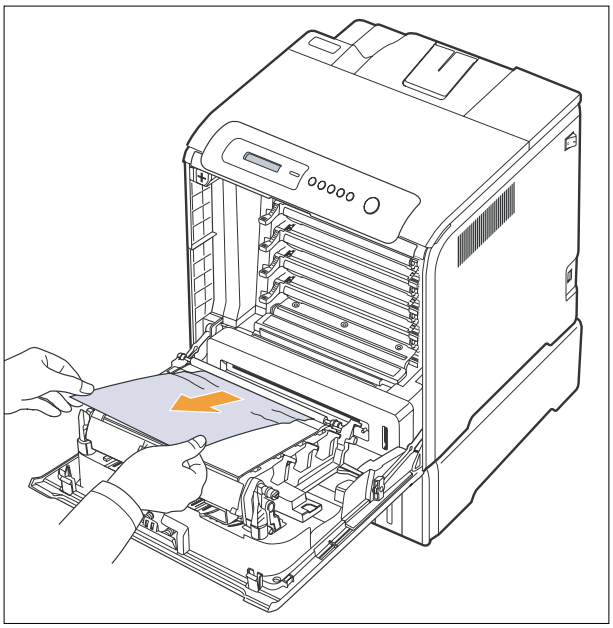


3. Slide the tray back into the machine and close the two jam covers.

4. Open the front cover.



5. Pull the jammed paper out in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



6. Close the front cover firmly. The machine will resume printing.

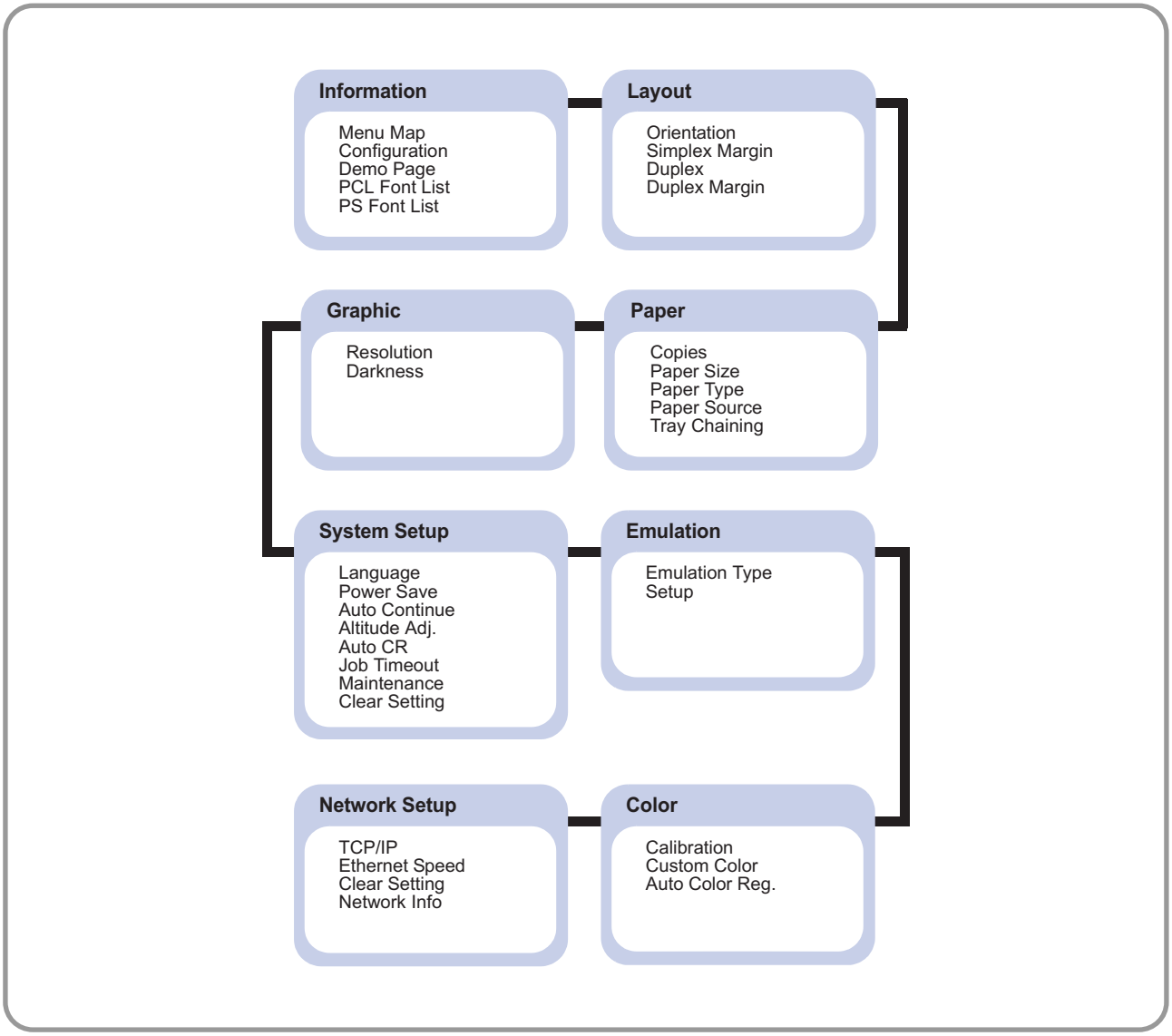
# 4.1.4 System setup

## 4.1.4.1 Accessing to menus

The next steps are the example to print the menu map of this machine, and they are the general way to select menu and configure your machine.

1. Make sure your machine is properly connected all the necessary cables, and turn on the machine.
2. Press the Menu button until you see the menu (ex. Information) you want on the bottom line of the display.
3. Press the Enter button to access the menu.
4. Press the Left/right arrow buttons until the menu item (ex. Menu Map) you want displays on the bottom line.
5. Press the OK button to confirm the selected item.
6. Press the Left/right arrow buttons until the menu item (ex. Print?) you want displays on the bottom line.
7. Press the OK button to process your selection, save your input or selection.
   An asterisk (*) appears next to the selection on the display, indicating that it is now the default.
8. To exit the menu, press the Back button repeatedly, or the Stop button.

## 4.1.4.2 Menu overview

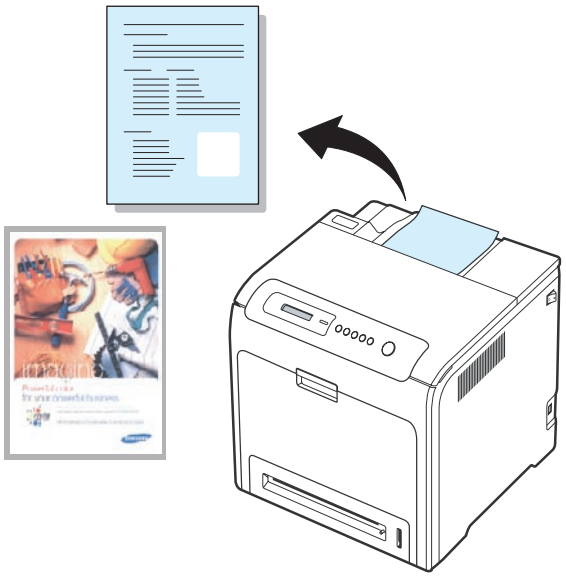


## 1) Menu - Information

∗ **This menu contains information pages that you can print to give details about the printer and its configuration**

⇨ Prints Configuration, Menu Map, Demo Page, PCL Font List, PS3 Font List

| Information |
| --- |
| Menu Map |
| Configuration |
| Demo Page |
| PCL Font List |
| PS3 Font List |



## 2) Menu - Layout

∗ **This menu allows you to adjust the Layout setting**

- Orientation ⇨ This menu allows to select the direction in witch information is printed on a page. ( Portrait, Landscape )
- Simplex Margin ⇨ Set the margin of print materials for one-sided printing.
- Duplex ⇨ To print on both sides of paper, choose the binding edge. ( Off, Long Edge, Short Edge )
- Duplex Margin ⇨ This menu allows set the margins for double-sided printing.

| Layout |
| --- |
| Orientation |
| Simplex Margin |
| Duplex |
| Duplex Margin |

### 3) Menu - Paper

- Copies ⇨ This menu allows select the maximum amount of copies.
- Paper Size ⇨ This menu allows select the default paper size.
- Paper Type ⇨ This menu allows select the default paper type for the print media.
- Paper Source ⇨ This menu allows the tray to process the print job. If you select "Auto", your machine supplies the paper from the multi-purpose tray first, than the tray1 and tray2 for the last. So if any tray is empty, then the machine try to search th paper from the next available tray.
- Tray Chaining ⇨ When paper source is selected any other value except "Auto" and the selected tray is empty, the machine to automatically print from other trays.
  But this menu item is set to "Off", the machine does not work until people insert paper into the specified tray.

| Paper |
| --- |
| Copies |
| Paper Size |
| Paper Type |
| Paper Source |

### 4) Menu - Graphic

- Resolution ⇨ This menu can select the default resolution. If the resolution is high, the clarity of the printouts is shaper, but the print time may take longer. ( Draft, Normal, Best )

| Graphic |
| --- |
| Resolution |

## 5) Menu - System Setup

∗ **Use the Setup menu to configure a variety of printer features**

• LCD Language ⇨ Changes languages on LCD

- EXP : 17 languages (English, Czech, Danish, Dutch, Finnish, French, German, Hungarian, Italian, Norwegian, Polish, Portuguese B, Portuguese E, Russian, Spanish, Swedish, Turkish)

- KOR, CHN : 3 Languages ( English, Korean, Chinese )

• Power Save ⇨ Sets how long the printer waits before going to power save (Default 15Min)

• Altitude Adj. ⇨ Optimize the print quality according to your altitude (Normal, High1, High2, High3)

• Auto CR ⇨ This option allows you to append the required carriage return to each line feed, which is useful to the UNIX user or DOS user. (LF, LF+CR)

• Job Timeout ⇨ Sets the amount of time a single print job is active before if must print. The machine handles incoming data as a single job, if it comes in within the specified time. When an error occurs while processing data from the computer and the data flow stops, the machine waits the specified amount of time and then cancels printing if data flow does not resume.

• Maintenance
- Check Others : Allows you to view the total number of pages printed with each of the consumable items such as Transfer Belt, Fuser, MP/Tray1/Tray2 Pick-up Rollers
- Alarm Shortage : Determines how the printer behaves when consumable items run low

• Clear Setting ⇨ Allows you to restore the printer's factory default settings

| Setup |
|---|
| **Language** |
| **Power Save** |
| **Auto Continue** |
| **Altitude Adj.** |
| **Auto CR** |
| **Job Timeout** |
| **Maintenance** |
| **Clear Setting** |

## 6) Menu - Emulation

• Emulation Type ⇨ Languages from the computer and the machine are different, the printing quality can not be confirmed. It is recommended to set this menu to °∞Auto°± to switch the proper language.

• Setup
- PCL : This Menu allows the PCL emulation configuration. You can set the font type, symbol type, lines per page and font size.
- Print PS Error : This menu provides you with the Print PS Error menu item. You can select whether or not your printer prints an error list when a PS error occurs.

| Emulation |
|---|
| Emulation Type |
| Setup |
| - PCL |
| - PostScript |

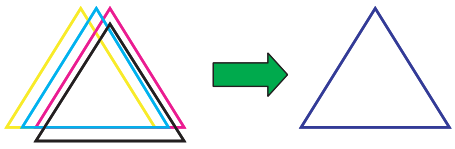
## 7) Menu - Color

∗ **This menu allows you to adjust the color setting**

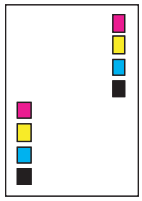
• Custom Color ⇨ Adjust the Contrast of each color ( -5 ~ 5 )

• Auto Color Reg ⇨ Adjust the position of color texts or graphics to match the position of the printed colors to those on your screen

| Color |
|---|
| Custom Color |
| Auto Color Reg |



**ACR Pattern**



Note : ACR can be automatically executed in the following situations :

1) Power On
2) Cover Open -> Close
3) Waking up from sleeping mode
4) After printing every 100 or 50 pages
5) ...

## 8) Menu - Network

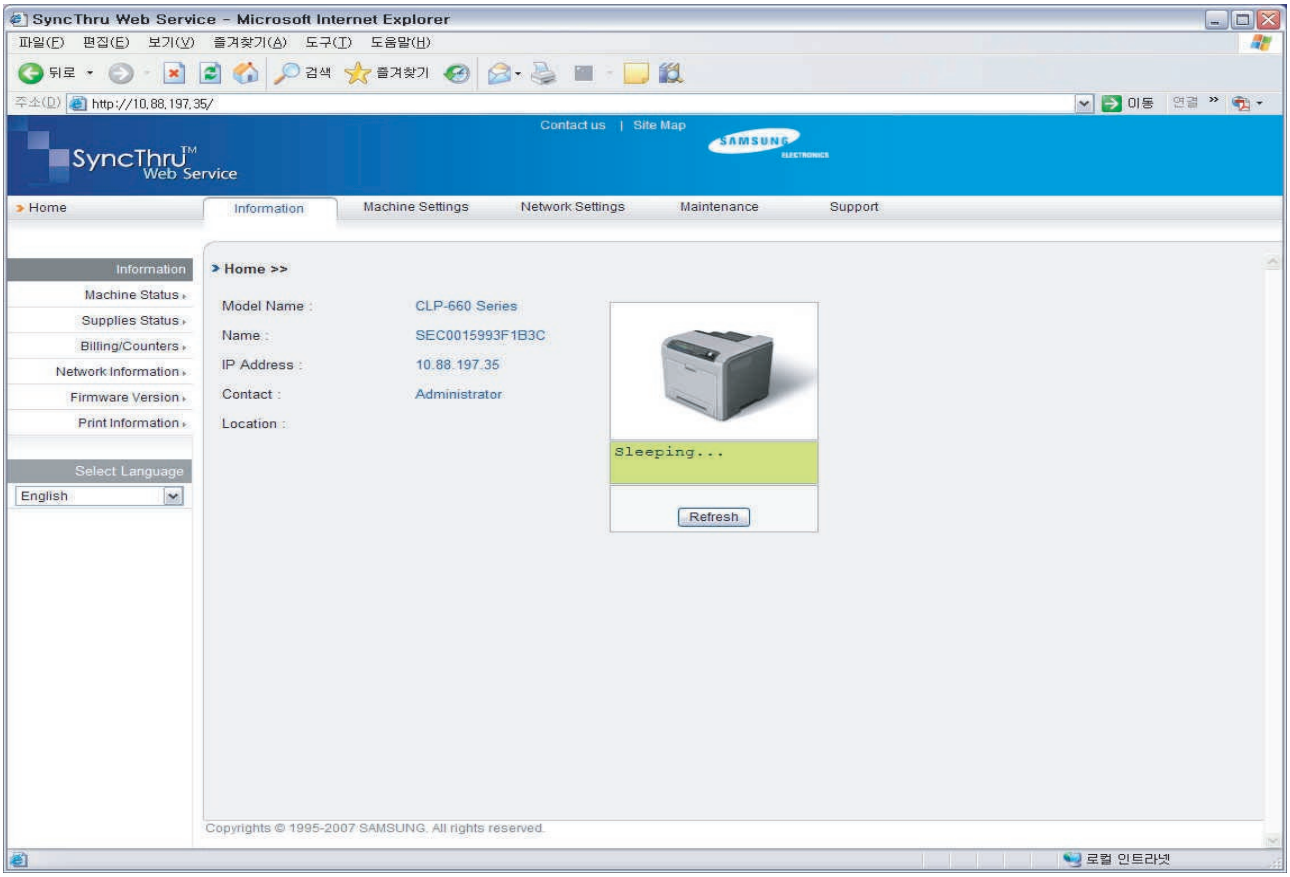
**∗ This menu lets you configure the network interface card**

- TCP/IP ⇨ If you are using the TCP/IP protocol for networking, select this menu. (DHCP, BOOTP, Static)
- Ethernet Speed ⇨ Set the communication speed for ethernet connection.
- Clear Setting ⇨ Clear the network setting.
- Network Info. ⇨ Prints Network Configuration Page.

| Network |
| --- |
| TCP/IP |
| Ethernet Speed |
| Clear Setting |
| Network Info |

## 9) Network Application - SWS

**∗ SWS ( SynchThru Web Service )**



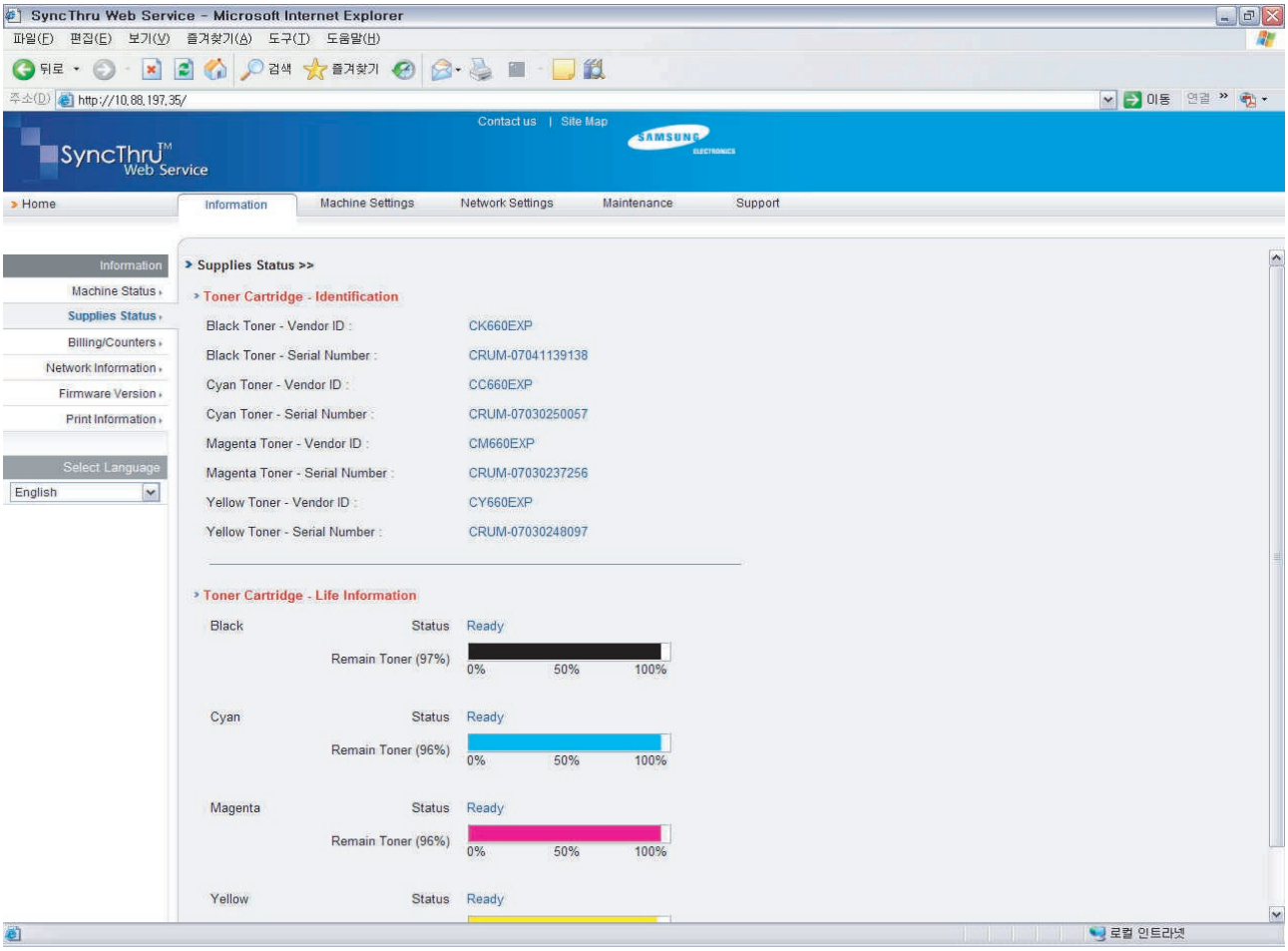
## * Features

• The SWS is an upgraded version of EWS(Embedded Web Service).

• By entering the IP address of your printer, you can use the SWS.

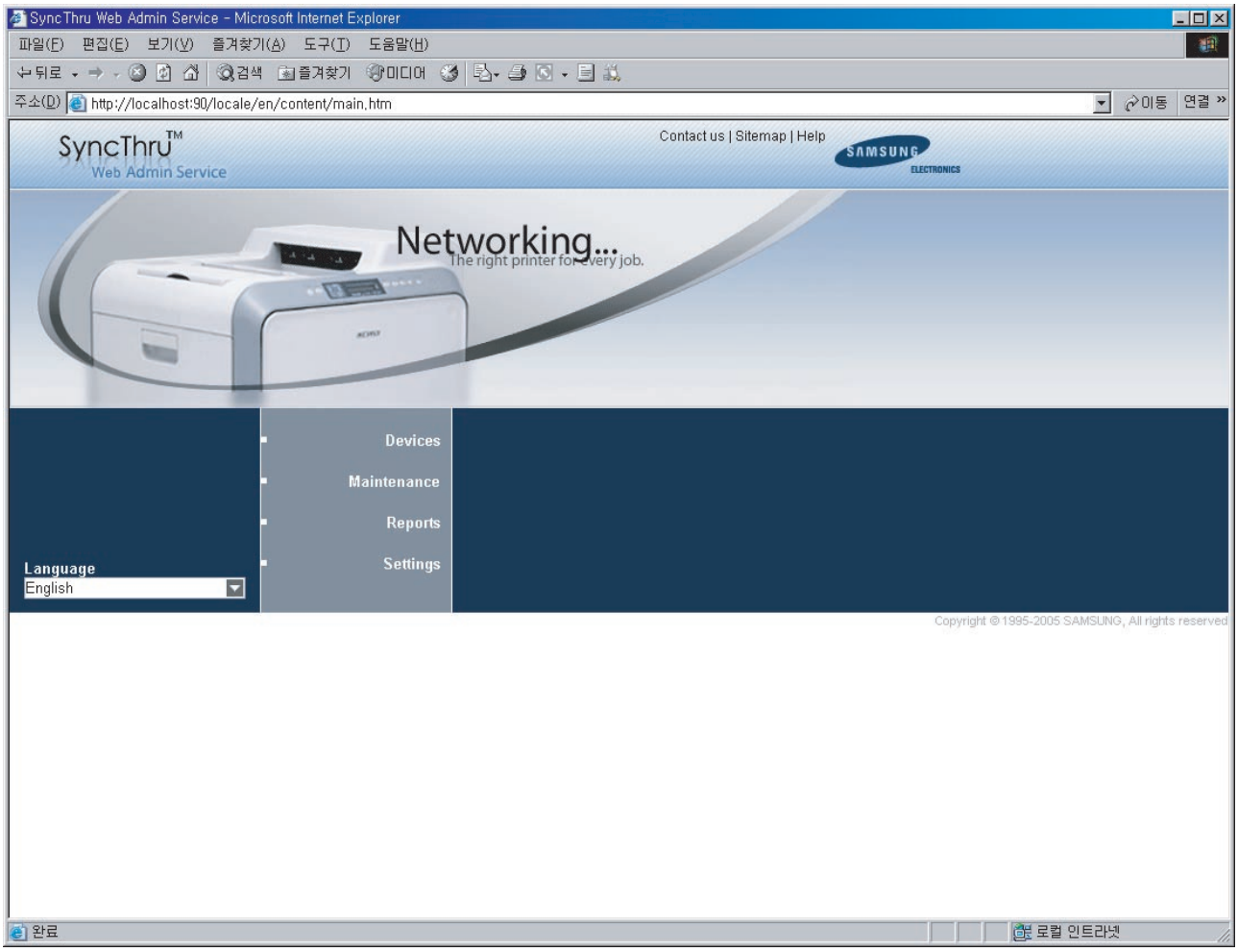
• Printer/Network settings can be easily changed by using SWS.

• Printer/Network status can be monitored by using SWS.



## 10) Network Application - SWAS

### ∗ SWAS ( SynchThru Web Admin Service)



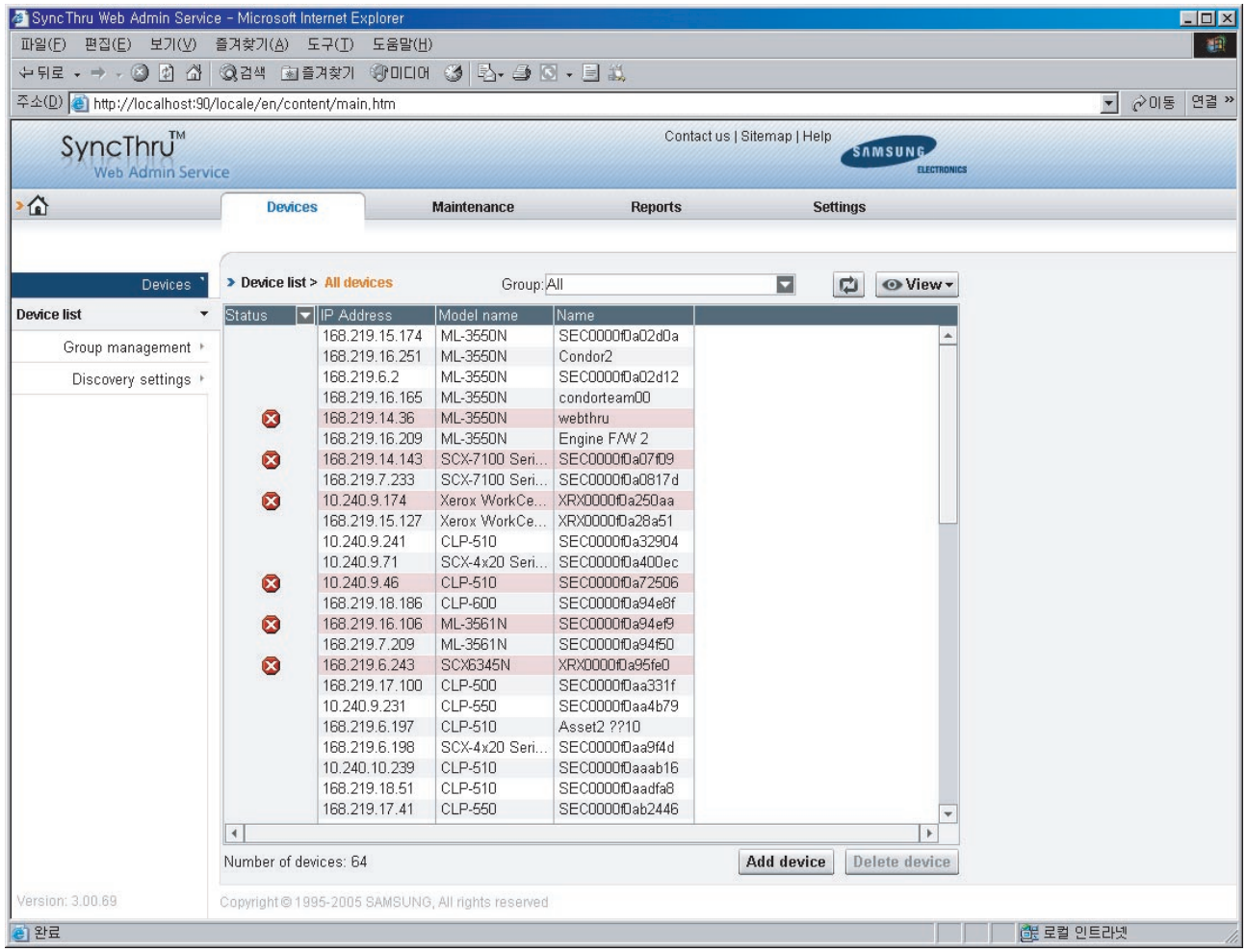
## ∗ Features

• SWAS was implemented based on the Printer MIB-II (RFC3805).

• Network Printer Administration can be conveniently made by using SWAS.

• Remote Diagnostics can be accomplished by using SWAS.

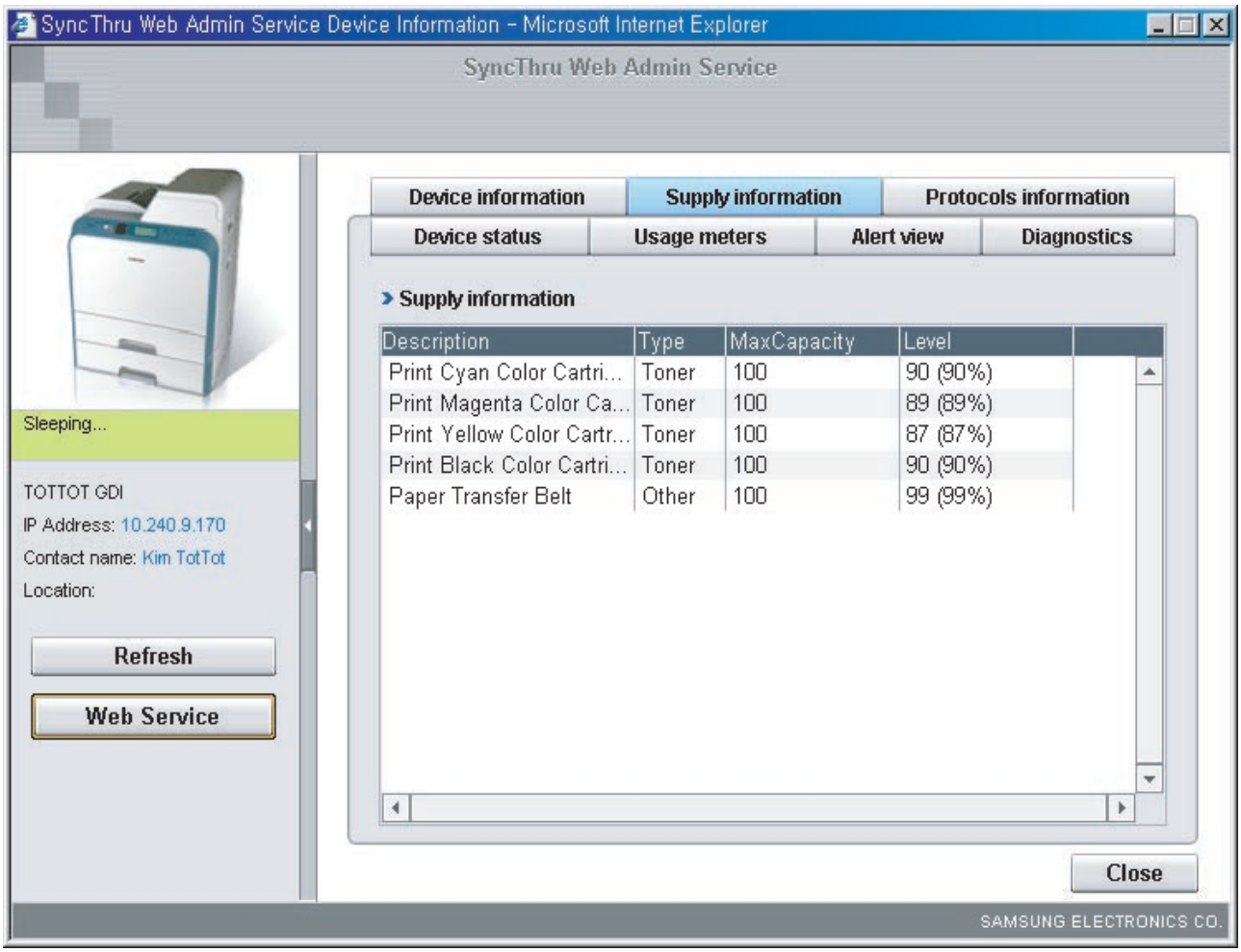
• The status of Samsung Network Printers (including CLP-660, CLP-610, CLP-300N, ML-3561N, etc) can be monitored by using SWAS.



## 11) Network Application - SWAS

### ∗ Features

• The status of each printer can be monitored in detail by using SWAS.



## 12) Network Application - ENS, ATOS

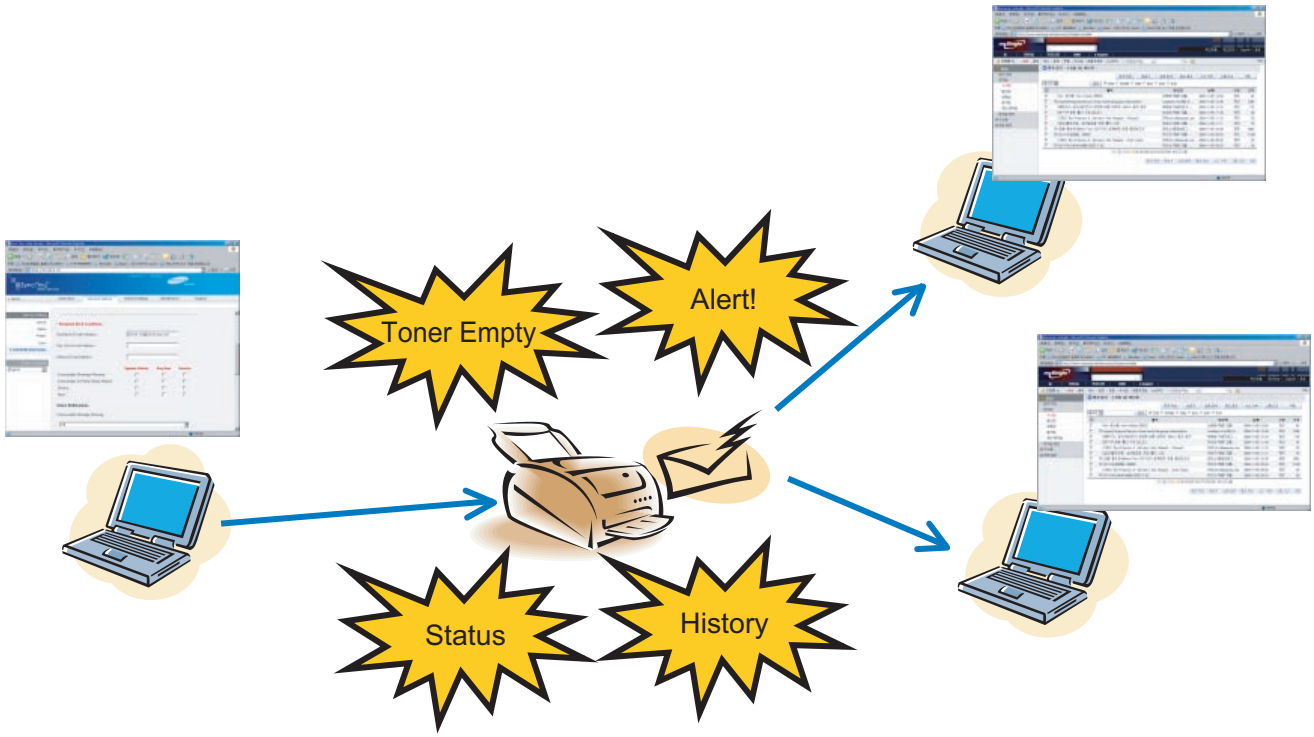
**∗ ENS (Email Notification System)/ATOS (Automatic Toner Ordering System)**

• ENS sends the specified users the email reports on the printer status, alert, and history.

• CLP-610ND/660N/660 supports ENS.

• ENS can be configured by using SWS.

• ATOS sends toner ordering emails automatically by using ENS.



## 4.1.4.3 Maintenance

This chapter provides information for maintaining your machine and the toner cartridge.

This chapter includes:

- Printing a machine configuration report
- Printing a network report
- Monitoring the supplies life
- Clearing the toner empty message
- Cleaning your machine
- Maintaining the cartridge
- Redistributing toner
- Replacing the toner cartridge
- Replacing the Paper Transfer Belt
- Maintenance Parts
- Managing your machine from the website

### ■ Printing a machine configuration report

You can print the machine's information and job report.

1. Press the Menu button on the control panel until you see Information on the bottom line of the display.
2. Press the OK button.
3. Press the Left/right arrow button until Configuration displays.
4. Press the OK button.
5. The display shows Print?, then press the OK button to print the configuration report.

### ■ Printing a network report

You can print the machine's network information such as protocol type you set, IP address and so forth.

1. Press the Menu button on the control panel until you see Network Setup on the bottom line of the display.
2. Press the OK button.
3. Press the Left/right arrow button until Network Info. displays.
4. Press the OK button.
5. The display shows Print?, then press the OK button to print the configuration report.

## ■ Monitoring the supplies life

If you want to view the supply life indicators, follow the next step.

1. Press the Menu button on the control panel until you see System Setup on the bottom line of the display.
2. Press the OK button.
3. Press the Left/right arrow button until Maintenance displays.
4. Press the OK button.
5. Press the Left/right arrow button until Supplies Life displays.
6. Press the OK button.
7. The display shows two options as you press the Left/right arrow button.
   - Total : displays the total number of pages printed.
   - Toner Remains: displays how much toner remains in the cartridge.
8. When you select the option, press OK to browse the life.

## ■ Clearing the toner empty message

When you want to set the machine not to show the toner empty and replace the toner message, follow the next steps.

1. Press Machine Setup on the control panel.
2. Press Admin Setting. When the login message pops up, then enter password and press OK.
3. Press the General tab > Ignore Toner Empty Status.
4. Press On.
5. Press OK.

## ■ Cleaning your machine

To maintain print quality, follow the cleaning procedures below each time the toner cartridge is replaced or if print and scan quality problems occur.

### Cleaning the outside

Clean the machine cabinet with a soft lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto or into the machine.

### Cleaning the inside

Contact a service representative to clean the inside of the machine.

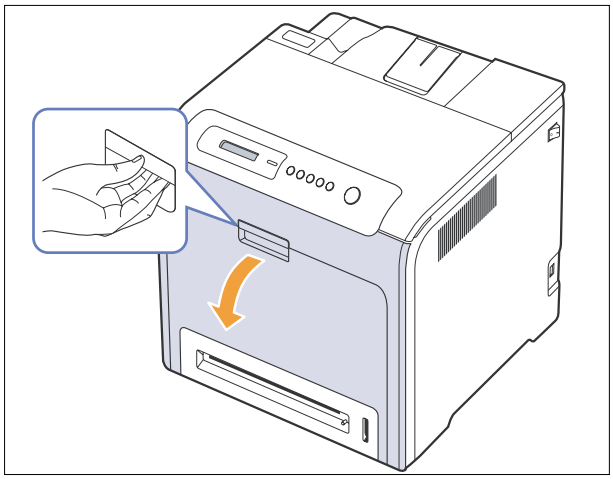
### Cleaning the inside

Contact a service representative to clean the inside of the machine.

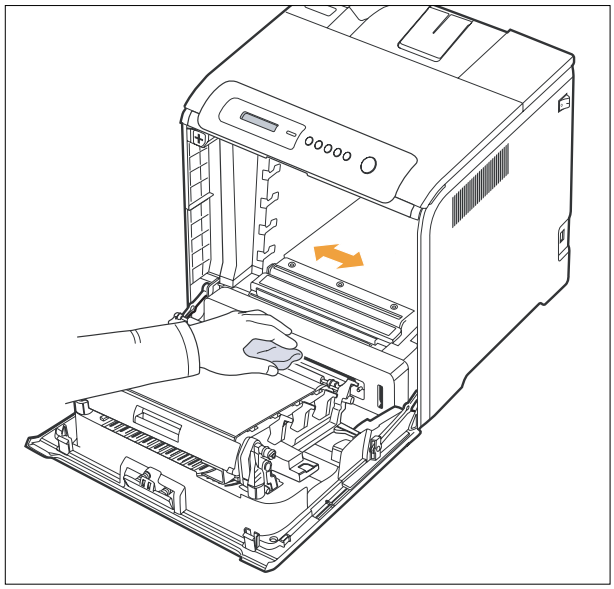
### Cleaning the paper transfer belt

The cleaning the paper transfer belt within this machine is recommended for its printing quality.
The cleaning period is best once a year or once 10,000 pages printing.

1. Prepare a soft lint-free cloth.
2. Turn off the machine.
3. Unplug the power cable.
4. Open the front cover.



5. Wipe the surface of the paper transfer belt.



6. Close the front cover.
7. Plug the power cable and turn the machine on.

## ■ Maintaining the cartridge

### Toner cartridge storage

To get the most from the toner cartridge, keep the following guidelines in mind:

- Do not remove the toner cartridge from its package until ready for use.
- Do not refill the toner cartridge. The machine warranty does not cover damage caused by using a refilled cartridge.
- Store toner cartridges in the same environment as your machine.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes.

### Expected cartridge life

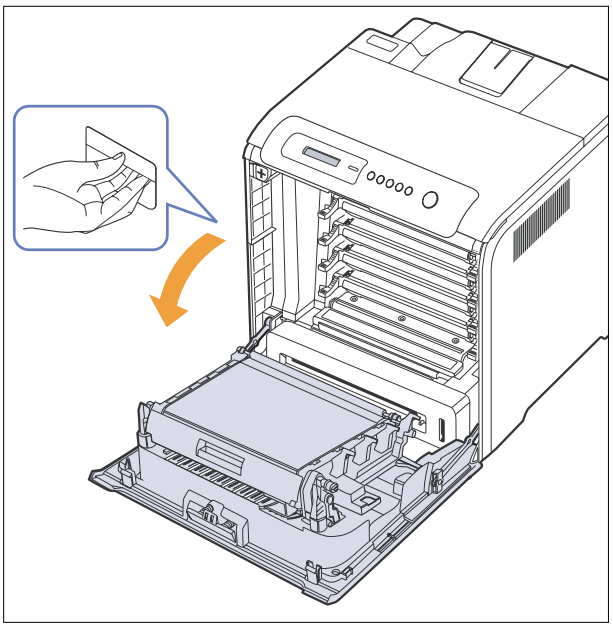
The toner cartridge yield depends on the amount of toner that print jobs require. Expected Cartridge Life is 20,000 standard pages in accordance with the ISO/IEC standard (supplied with the machine is standard pages). Average CMY(K) cartridge yield for the high yield cartridge is 5000(5500) standard pages in accordance with the ISO/IEC 19798. Average CMY(K) cartridge yield for the standard yield cartridge is 2000(2500) standard pages. The actual number may also be different depending on the print density of the pages you print on, and the number of pages may be affected by operating environment, printing interval, media type, and media size. If you print a lot of graphics, you may need to change the cartridge more often.

## ■ Redistributing toner

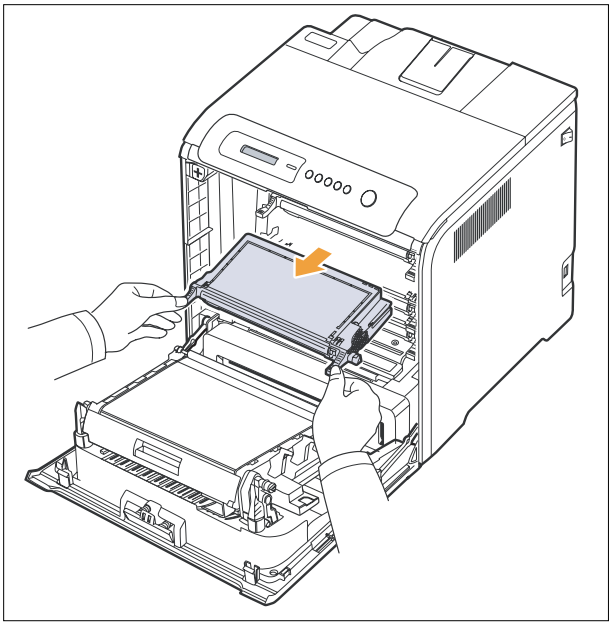
When a toner is low, faded or light areas may appear. It is possible that colored images may be printed with incorrect colors due to flawed mixing of toner colors when one of the colored toner cartridges is low on toner. You can temporarily improve print quality by redistributing the toner.

- The toner related message telling that the toner is low may appear on the display.
- SmartPanel program window appears on the computer telling you which color cartridge is low on toner.

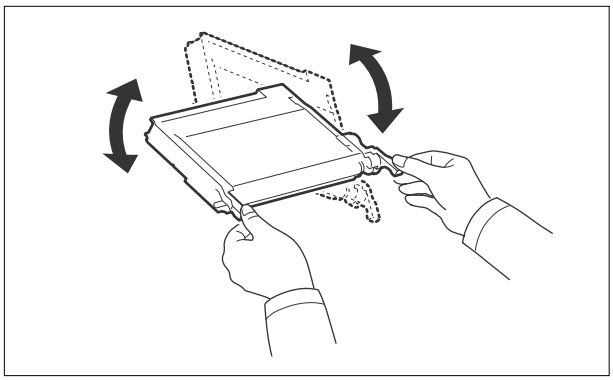
1. Using the handle, completely open the front cover.



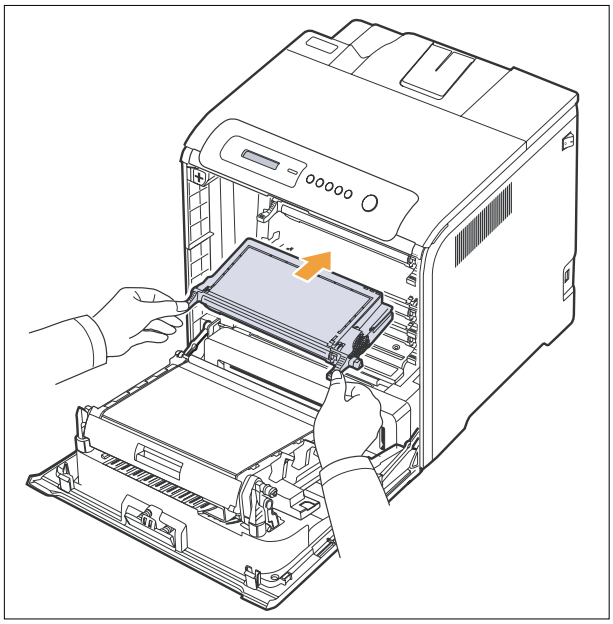
2. Grasp the handles on the toner cartridge and pull to remove the cartridge from the machine.



3. Holding both handles on the toner cartridge, gently rock it from side to side to redistribute the toner.



4. Slide the toner cartridge back into the machine.



5. Close the front cover. Make sure that the cover is securely latched.

## ■ Replacing the toner cartridge

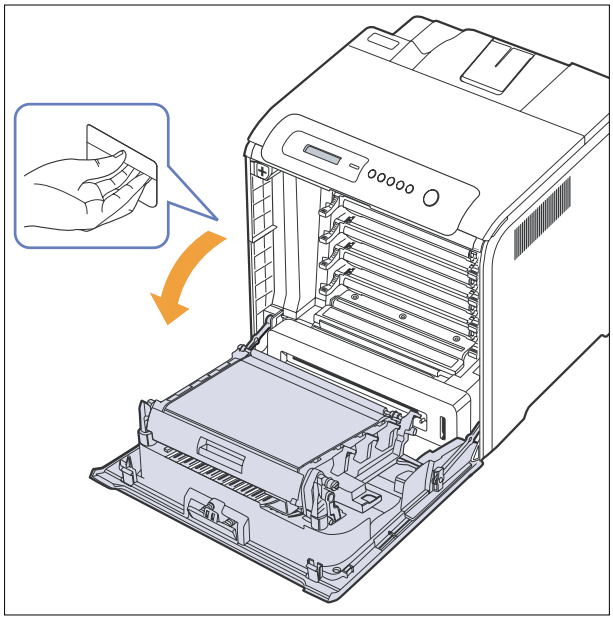
The machine uses four colors and has a different toner cartridge for each one: yellow (Y), magenta (M), cyan (C), and black (K).

- The status LED and the toner related message on the display indicate that the toner cartridge should be replaced with each individual toner cartridge according to its color.
- The machine stops printing. Incoming faxes are saved in memory.

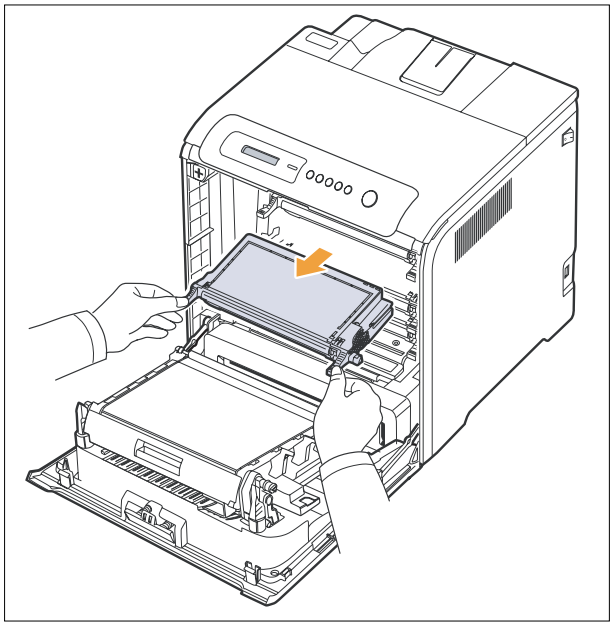
At this stage, the toner cartridge needs to be replaced. Check the type of the toner cartridge for your machine.

1. Turn the machine off, then wait a few minutes for the machine to cool.

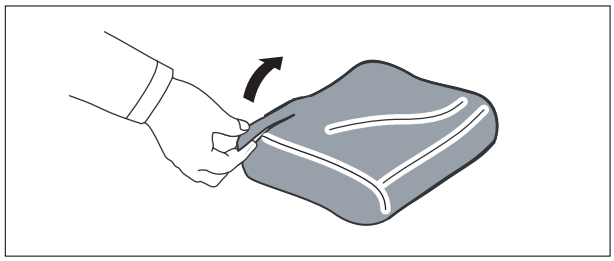
2. Using the handle, completely open the front cover.



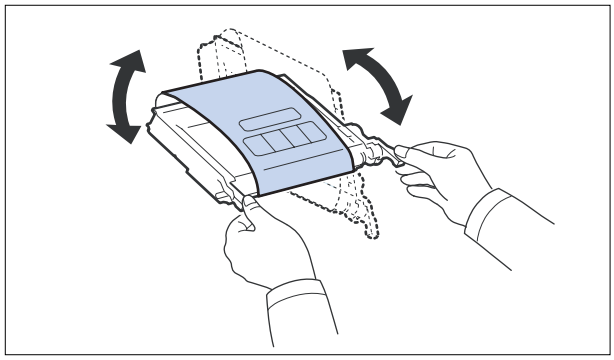
3. Grasp the handles on the toner cartridge and pull to remove the cartridge from the machine.



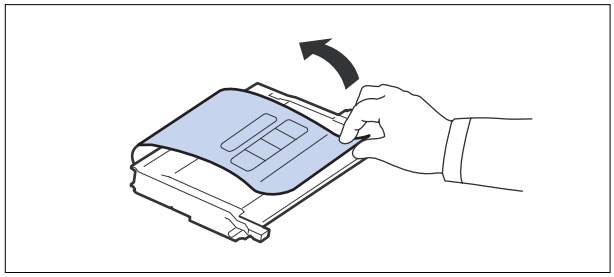
4. Take a new toner cartridge out of its package.



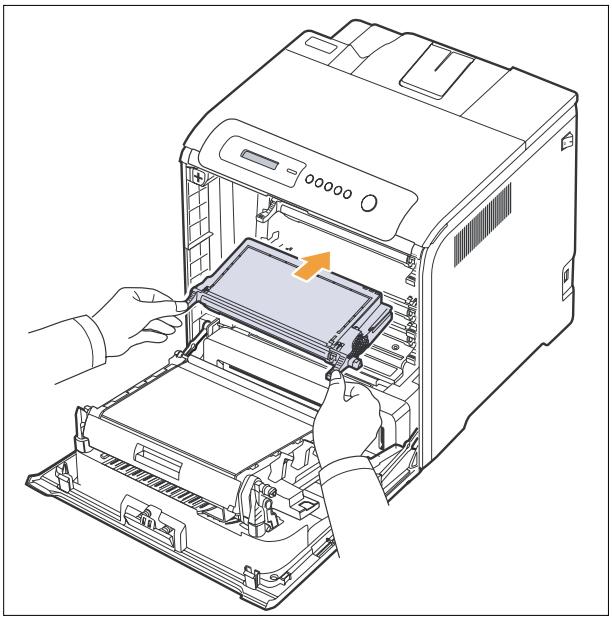
5. Holding both handles on the toner cartridge, gently rock it from side to side to evenly distribute the toner.



6. Place the toner cartridge on a flat surface, as shown, and remove the paper covering the toner cartridge by removing the tape.



7. Make sure that the color of the toner cartridge matches the color slot and then grasp the handles on the toner cartridge. Insert the cartridge until it clicks into place.



8. Close the front cover. Make sure that the cover is securely latched, and then turn the machine on.

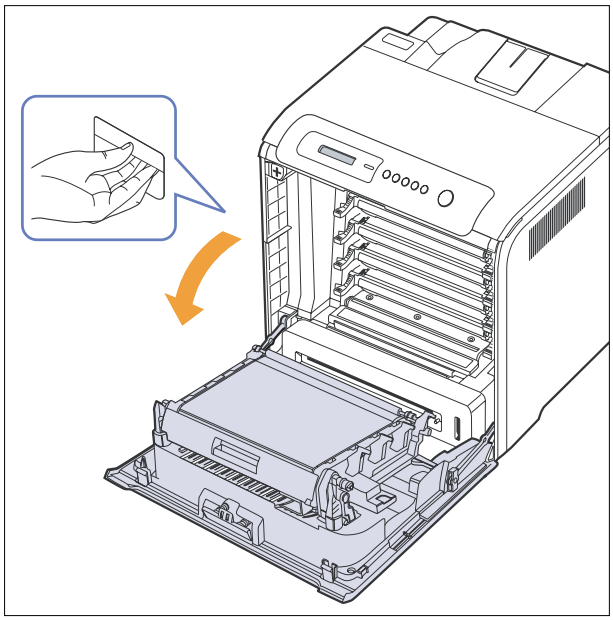
## ■ Replacing the Paper Transfer Belt

The life of the paper transfer belt is approximately 50,000 black and color pages. When the life span of the paper transfer belt, you have to replace it.

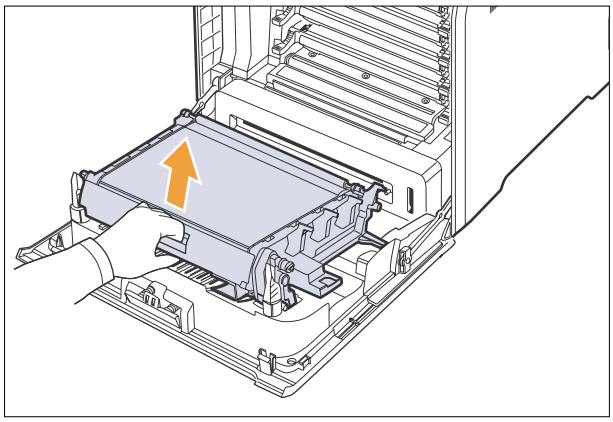
- The transfer belt related message appears on the display telling it's replacement.
- SmartPanel program window appears on the computer telling you the paper transfer belt needs to be replaced.

1. Turn the machine off, then wait a few minutes for the machine to cool.

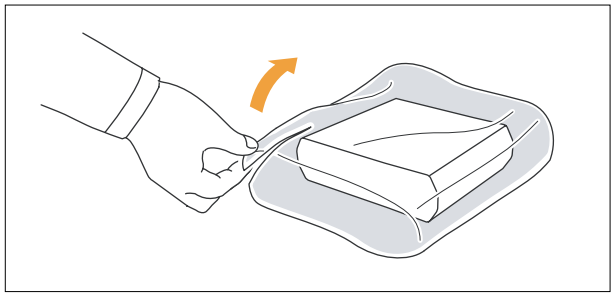
2. Using the handle, completely open the front cover.



3. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.

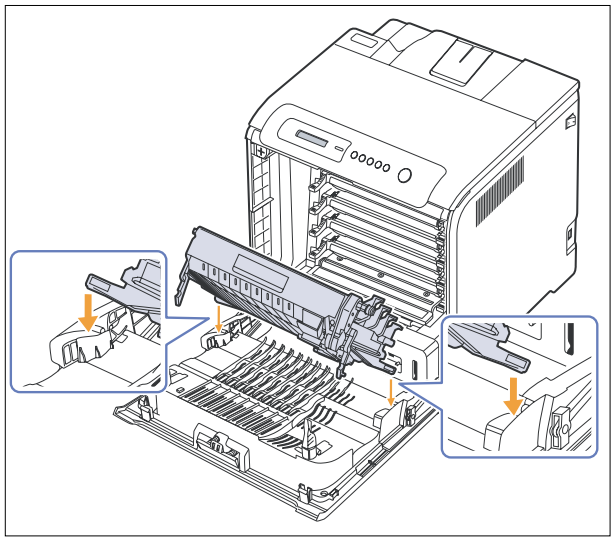


4. Take a new paper transfer belt out of its package.

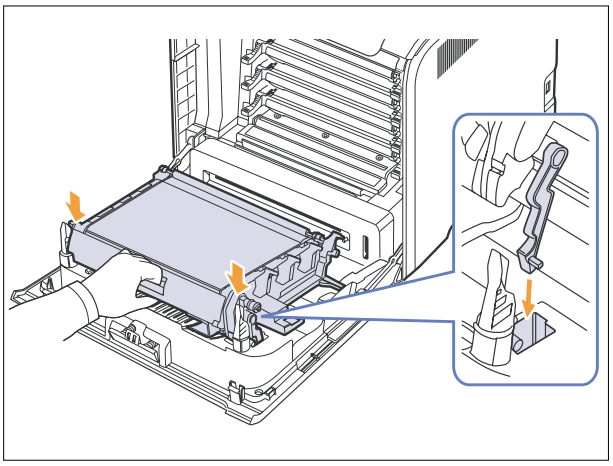


5. Remove the paper covering the paper transfer belt by removing the tape.

6. Holding the handle on the new paper transfer belt, align it with the slots on the inside of the front cover.



7. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.



8. Close the front cover firmly.

9. Turn the machine on.

## ■ Managing your machine from the website

If you have connected your machine to a network and set up TCP/IP network parameters correctly, you can manage the machine via Samsung's SyncThru Web Service, an embedded web server. Use SyncThru Web Service to:

- View the device information and check its current status.
- Change TCP/IP parameters and set up other network parameters.
- Change the printer properties.
- Set the machine to send email notifications and update you on the machine's status.
- Get support for using the machine.

To access SyncThru Web Service:

1. Start a web browser, such as Internet Explorer, from Windows.
2. Enter the machine IP address (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click Go. Your machine's embedded website opens.

## 4.1.4.3 Sample Pattern

This product provides several printable test patterns for maintenance purposes. These patterns can be used to aid the diagnosis of print quality problems.

### ■ Printing a Demo Page

Press "OK(Okay)" button for 2 or 3 seconds when "Ready" message displays on LCD panel.
Then demo page will be printed out.

imagine
Powerful color
for your powerful business
COLOR Laser
A superior-performance and economical color laser printer.
Fast speed, network and the built-in duplex(CLP-610ND/660ND)
will elevate your printing environments powerfully.
With the Samsung CLP-610/660 series, it's not that hard to imagine.
SAMSUNG

## ■ Printing a Configuration Page

You can print a configuration page from the printer's control panel. Use the configuration page to view the current settings, to help troubleshoot problems.
To print a configuration page: In ready mode, press and hold the Stop button on the control panel for 5 seconds.
A configuration page prints out.

**SAMSUNG Color Laser Printer CLP-660 Series**

**[ Configuration ]**

***Magenta Cartridge Information (Cont.)***

Model ID : CLP-M660A
Capacity : 2K
Supplier : SAMSUNG(EUROPE)
Product Date : 2007.07
Serial-No : CRUM-07072653288

***Yellow Cartridge Information (Cont.)***

Model ID : CLP-Y660A
Capacity : 2K
Supplier : SAMSUNG(EUROPE)
Product Date : 2007.07
Serial-No : CRUM-07072653710

***Transfer Belt Information***

PTB Remaining : 100 %
Page Counts : 282
Company ID : SAMSUNG
Supplier ID : CT660EXP
Back up Supplier : CT660EXP
Reset PTB : 0
Page Count after Replace : 0
Model ID : CLP-T660B
Duplex : Support
Supplier : SAMSUNG(EXPORT)
Product Date : 2007.07
Serial-No : CRUM-07072561821

***ACR Result Page (0)***

Result : Signal Noise Error
ACR Kind : Menu ACR
Time in ACR : 261 min
Page Count : 41 pages
PTB Count : 281 pages
Custom Color : 5, 5, 5, 5
Altitude : Plain
Temp : Inner-34, Outer-28, Humidity-106
Y-Data : 210, 210, 205, 200
X-Data : 231, 242, 206, 240
W-Data : 4, 65529, 1, 0
VCS Reg. : 0x2900, 0x1407, 0x13EE, 0x8010, 0x0B40
0x010F, 0x0B59, 0x010D, 0x0014, 0x0014, 0x0014
0x0014, 0x0000, 0x0000, 0x1A1A, 0x1A1A, 0x0000
0x0000, 0x204C, 0x0019, 0x0F00, 0x0936, 0xF12D
HPVC Margin : 100, 2971, 428
VCS Mem Data : 0x09B2, 0x085D, 0x0955, 0x0936

***ACR Result Page (1)***

Result : Signal Noise Error
ACR Kind : Menu ACR
Time in ACR : 259 min
Page Count : 41 pages
PTB Count : 281 pages
Custom Color : 5, 5, 5, 5
Altitude : Plain
Temp : Inner-34, Outer-27, Humidity-106
Y-Data : 210, 210, 205, 200
X-Data : 231, 242, 206, 240
W-Data : 4, 65529, 1, 0
VCS Reg. : 0x2900, 0x1407, 0x13EE, 0x8010, 0x0B40
0x010F, 0x0B59, 0x010D, 0x0014, 0x0014, 0x0014
0x0014, 0x0000, 0x0000, 0x1A1A, 0x1A1A, 0x0000
0x0000, 0x204C, 0x0019, 0x0F00, 0x0936, 0xF12D
HPVC Margin : 100, 2971, 428
VCS Mem Data : 0x09B2, 0x085D, 0x0955, 0x0936

***ACR Result Page (2)***

Result : Signal Noise Error
ACR Kind : Temp. Condition ACR
Time in ACR : 253 min
Page Count : 34 pages
PTB Count : 274 pages
Custom Color : 5, 5, 5, 5
Altitude : Plain

***ACR Result Page (3)***

Result : Signal Noise Error
ACR Kind : Temp. Condition ACR
Time in ACR : 125 min
Page Count : 30 pages
PTB Count : 270 pages
Custom Color : 5, 5, 5, 5
Altitude : Plain

SAMSUNG
http://www.samsungprinter.com

## ■ Reports

**Supplies Information Report**

- Total Image Count, Total Page Count (color/mono)
  Image Unit / Deve Roller / Fuser / Transfer Roller / Transfer Belt Life
  Toner Image, Toner Dot Count
  Toner Remains Percent, Toner Average Coverage
  Tray Roller Life
  Scan Page Counts
  Beam Size (Draft/Normal)

**Toner Supply Page**

- Two cases
  - Insert new OPC (Check count = 0 )
  - Change bottle ( Check the difference of serial number )

**Etc.**

- Network Info. / NetScan Report
  Error Info. / Usage Page / Component Check / Service Support

## ■ Network Configuration Report

- General information : Host name, Contact, Mac address ,N/W firmware Version

  TCP/IP Information : IP Assignment, IP Address, Subnet Mask, Default Gateway

  IPP Information / LPD Information / SLP Information / IP Filtering Information / UPnp Information

  Network Connection Status:
  It describe the network line status by checking the physical line.
  O.K - Network connection has no problem and connected
  Disconnected - Network connection is not connected.
  Defective Network line is connected but line has some defect (Short or Open)

## ■ Messages (Printer & Engine)

### Consumables Life

- Toner Low(95%,K(97.5%)) / Replace(100%) / Empty(110%,K(105%))

Replace transfer belt soon(90%) / Replace transfer belt(100%) - 100k

Replace fuser soon(90%) / Replace fuser(100%) - 100k

Replace imaging unit soon(90%) / Replace imaging unit(100%) - 50k (OPC)

Replace Transfer(T2) roller(100%) - 100k

Replace Tray1 Pick-Roller(100%) - 50k

### Service call error

- Low heat error Cycle power / Over heat error cycle power / LSU motor error cycle power / LSU Hsync error cycle power / Open Heat error cycle power / Main Motor Locked / Deve Home error / Fuser Fan Locked

### Paper

- Jam0 / Jam1/ Jam2

TrayPaper Mismatch, Load Manual Press Start Key

Manual Feeder Empty / Tray1 Empty

### Etc.

- Invalid Black/C/M/Y Toner, Install Black/C/M/Y Toner Door Open, SCF Cover Open, Out-Bin Full, Toner Supply Error

## ■ Special Operation

### Low Speed Mode

- Objective : To improve toner supply, it lowers the speed sometimes

1. Check the toner level 3 times, consecutively
2. If its level does not satisfy the normal condition, It lowers the speed followed by coverage

   Color - 25~49%(1/2), 50 ~74%(1/3), 75%~(1/4)

   Mono - 15~24%(1/3), 25~34%(1/4), 35~44%(1/5), 45~54%(1/6), 65~74%(1/8), 75%~(1/9)

### Auto Continue

- If auto continue set to ON, Printer automatically paper out after 15 sec in paper mismatch state

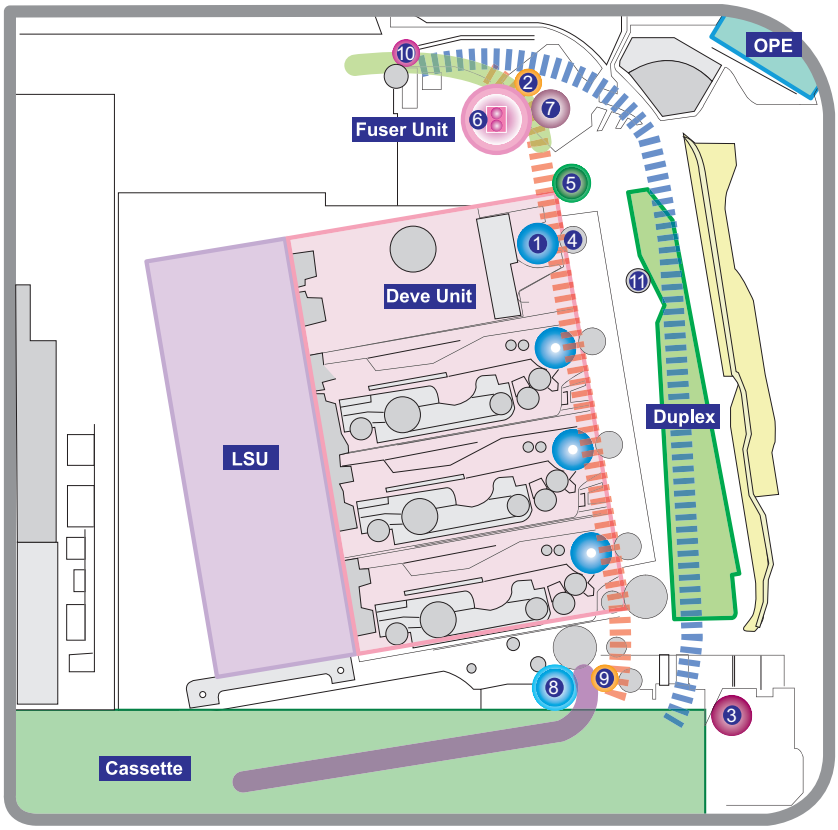
### Altitude

- Altitude Adj : It can adjust voltage conditions

## 4.1.4.4 Periodic Defective Image

If an image defects appears at regular intervals on the printed-paper, it is due to a faulty or damaged roller. Refer to the table below and check the condition of the appropriate roller.

| No | Roller | Period | Phenomenon |
|---|---|---|---|
| 1 | OPC Drum | 75.4mm | White and Black Spots |
| 2 | Charge Roller | 26.7mm | White/Black Spot and Periodic Band |
| 3 | Supply Roller | 40.8(YMC) | Periodic Band (by little difference of density) |
| | | 43mm(K) | |
| 4 | Developing Roller | 30.6mm (YMC) | White Spot, Horizontal black band |
| | | 32.5mm(K) | |
| 5 | Transfer Roller | 45mm | Periodic Band (by little difference of density) |
| 6 | Gap-ring | 39.0mm | Periodic Band |
| 7 | Fusing Belt | 125.6mm | White/Black Spot |




1. OPC (Organic Photo Conductor)
2. Charge Roller
3. MP Roller
4. Deve Roller
5. Transfer Roller
6. Heat Roller
7. Pressure Roller
8. Pick_up Roller
9. Rigi Roller
10. Exit Roller
11. Duplex Roller

## 4.1.4.5 F/W Upgrade

• USB and Network port are used to update

• Network applications (SWAS, SWS) can be used to update

• Normal Update
Send ROM file via USB, network port in Ready state It will automatically update and reset

• Special Mode Update
1. Power On While Pressing “Stop / Clear” Button
   - It displays download mode message
2. Send ROM file via USB
3. It will automatically update and reset

## 4.1.4.6 Engine Error Check

### ■ Consumable goods

• Install Cyan (Magenta, Yellow, Black) Toner

• Install Transfer Belt
▶ When the CRUM recognition has a problem, it occurs (the contact badness of CRUM terminal or not contact)
▶ When the Error occurs, retry minimum 15 times

• Invalid Cyan (Magenta, Yellow, Black) Toner

• Invalid Transfer Belt
▶ When the CRUM recognition has a problem, it occurs (In case of wrong CRUM reset or Printer reset)
- ex) Printer reset of domestic product, CRUM reset of export product

### ■ Paper Empty / Paper Mismatch

• Paper Empty In MP(Tray1, Tray2)
▶ In case of designated tray empty

• Load A4 In MP(Tray1, Tray2)
▶ In case of different size between the designated paper from driver and the inserted paper in tray - After finishing print 2 sheets

### ■ Paper Jam

• Jam 0 In MP(Tray1, Tray2)
▶ After Pick up start, in case that feed sensor does not detect the paper in regular time.

• Jam Inside Printer
▶ After Feed sensor out , in case that Exit sensor does not detect the paper in regular time.

• Jam In Exit Area
▶ After Exit sensor detect , in case of not Out in regular time.

## ■ Cover Error

• Cover Open : Install Transfer Belt message display by turns
- ▶ In case of open the Left cover or Not equipped with PTB
- ▶ When the state is Printer Power-On , the PTB connector is removed.

• SCF Cover Open
- ▶ In case of designated not Tray selection but Tray2 , in case of open the SCF jam cover

## ■ Service Call error

• Engine LSU Error
- ▶ In case of occuring lock signal input before LSU motor drives.
- ▶ In case of not occuring lock signal input after LSU motor On (within maximum 12 sec)

• Main Motor Error / Dev. Motor Error
- ▶ In case of occuring lock signal input before BLDC motor drives.
- ▶ In case of not occuring lock signal input after BLDC motor On (within 1.2sec)

• Rear Fan Error / Left Fan Error / SMPS Fan Error
- ▶ In case that input signal from the Fan motor display “High”, “Low” continually.

• ADC Not Confirm Error
- ▶ After ADC start , in case that confirm signal does not display for 200ms.

• Engine Fuser Over(Low) Heat Error
- ▶ Low heat : In case of not heating FUSER, In case that the state of Warm-up does not rise the regular temperature in regular time, In case that Ready or printing is below special temperature , In case of not detecting temperature sensor with wrong equipped Thermistor , In case of not connecting the Thermistor, In case that Thermostat is broken
  - ❖ In case that Thermostat is broken - in case of continuous more than 10 sec and ADC below 70
  - ❖ Warm-up : when the warm - up start, in case that fuser temperature is more than ADC 240 for 10 sec in case that fuser temperature slope is minus
  - ❖ Ready : In case of continuous more than 10 sec and below 100
  - ❖ Pre-printing : In case of continuous more than 5 sec and below (Ready target temperature - 30)
  - ❖ Printing :In case of continuous more than 5 sec and below (Printing target temperature - 50)
- ▶ Over heat : In case that the temperuture of FUSER is more than special temperuture, In case that Thermistor becomes short
  - ❖ In case that the fuser temperature is continuous more than 4sec and over 230

## 4.1.4.7 Tech Mode/ EDC Mode

### 1) Tech Mode

■ Method to enter

1. After turn on the system power, check the “Ready” message on the LCD.

2. To enter the Tech Mode, Press the key in the order.
“Menu → Back → Left arrow → Right arrow → OK → Stop”

3. To get out of the Tech Mode, Press the key in the order again.
“Menu → Back → Left arrow → Right arrow → OK → Stop”

■ Key

| Key | Description |
|---|---|
| Menu | Move to the top menu |
| Left Arrow | Move test item |
| OK | Start testing or select Sub-item |
| Right arrow | Move test item |
| Back | Move upper menu |
| Stop | Stop testing |

■ Tech Mode Menu

| | | | | |
|---|---|---|---|---|
| Data Set | Counter Reset | Fuser | | You can reset the Fuser Count. |
| | | Pickup Roller | Tray1 Tray2 MP | You can reset the Roller-Count of each tray. |
| | Margin | Top Margin | [-10-10]: | You can set the Top Margin of all image (-10mm ~ +10mm) |
| | | Left Margin | [-10-10]: | You can set the Left Margin of all image (-10mm ~ +10mm) |
| Report | Configuration | Printing… | | You can print the configuration report. |
| | Event Log | Printing… | | You can print the Event log page. It contains Jam error, the number of Fuser reset. |

## 2) EDC Mode

■ Method to enter

1. After turn on the system power, check the "Ready" message on the LCD.

2. To enter the EDC Mode, Push the button like next time.
"Menu → Stop → Left arrow → Back → OK → Right arrow"

3. The message "COMPONENT TEST Press Menu Key" display on the LCD.

4. To get out of the EDC Mode, Press the "Stop" key

■ EDC Mode Menu

0. Cover Status

| Item | Description |
|---|---|
| Top Cover | When a top cover opened, "Open" message display LCD. If the top cover closed, "Closed" message display LCD. |
| Tray2 Door | When a tray2 door opened, "Open" message display LCD. If the tray2 door closed, "Closed" message display LCD. |

## 1. Sensor Status

| Item | Description |
|---|---|
| Regi. Sensor | If actuator is checked by sensor, "Without Paper" message will be displayed. if not, "With Paper" will be. |
| Exit Sensor | If actuator is checked by sensor, "Without Paper" message will be displayed. if not, "With Paper" will be. |
| MP Empty | If paper exists in the MP tray, "With Paper" will be displayed. If not, "Without Paper" will be. |
| T1 Paper Empty | If paper exists in the 1st tray, "With Paper" will be displayed. If not, "Without Paper" will be. |
| T2 Paper Empty | If paper exists in the 2nd tray, "With Paper" will be displayed. If not, "Without Paper" will be. |

## 2. Motor Test

| Item | Description |
|---|---|
| Main Mtr Nor. | If “OK” key is pushed after “ON” displayed, motor will be run. Main motor will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| Dev Mtr Nor. | “OK” key is pushed after “ON” displayed, motor will be run. Dev motor will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| Fuser Mtr Fwd. | If “OK” key is pushed after “ON” displayed, motor will be run forward. Fuser motor will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| Fuser Mtr Bwd. | If “OK” key is pushed after “ON” displayed, motor will be run Backward. Fuser motor will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| T2 Feed Motor | If “OK” key is pushed after “ON” displayed, motor will be run. T2 feed motor will auto - stop after 5 seconds and ”OFF” message will be displayed. |

## 3. Fan Test

| Item | Description |
|---|---|
| Fuser Fan | If “OK” key is pushed after “ON” displayed, fan will be run. Fuser fan will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| SMPS Fan | If “OK” key is pushed after “ON” displayed, fan will be run. SMPS fan will auto - stop after 5 seconds and ”OFF” message will be displayed. |
| LSU Fan | If “OK” key is pushed after “ON” displayed, fan will be run. LSU fan will auto - stop after 5 seconds and ”OFF” message will be displayed. |

### 4. Clutch/Sol.

| Item | Description |
|---|---|
| T1 P - up Clutch | When "OK" key is pushed after "ON" message displayed, clutch turn on. pick up clutch will be turn off after 5 seconds and "OFF" message will be displayed. |
| T2 P - up Clutch | When "OK" key is pushed after "ON" message displayed, clutch turn on. pick up clutch will be turn off after 5 seconds and "OFF" message will be displayed. (when SCF is not installed, "not installed" message will be displayed ) |
| MP P - up Clutch | When "OK" key is pushed after "ON" message displayed, clutch turn on. pick up clutch will be turn off after 5 seconds and "OFF" message will be displayed. |
| K Dev. Clutch | When "OK" key is pushed after "ON" message displayed, clutch turn on. K - clutch will be turn off after 5 seconds and "OFF" message will be displayed. |

### 5. Fuser Ctrl

| Item | Description |
|---|---|
| Fuser1 Control | Fuser 1 on and off. "ON" is selected, fuser will be active and display the fuser temperature [XXX] but "OFF" is selected, fuser will be stop and [0] display |
| Fuser2 Control | Fuser 2 on and off. "ON" is selected, fuser will be active and display the fuser temperature [XXX] but "OFF" is selected, fuser will be stop and [0] display |
| Fuser Temp.A | Fuser1 temperature displayed on LCD (example: [251] ) |
| Fuser Temp.B | Fuser2 temperature displayed on LCD (example: [251] ) |

### 6. LSU Control

| Item | Description |
|---|---|
| LD Power Y | When "OK" key is pushed after "ON" message displayed, "OFF" message will be displayed after 5 seconds |
| LD Power M | When "OK" key is pushed after "ON" message displayed, "OFF" message will be displayed after 5 seconds |
| LD Power C | When "OK" key is pushed after "ON" message displayed, "OFF" message will be displayed after 5 seconds |
| LD Power K | When "OK" key is pushed after "ON" message displayed, "OFF" message will be displayed after 5 seconds |
| LSU Motor | If "OK" key is pushed after "ON" displayed, motor will be run. LSU motor will auto - stop after 5 seconds and "OFF" message will be displayed. |

### 7. DEV Control

| Item | Description |
|---|---|
| Charger | If “OK” key is pushed after “ON” displayed, Charger voltage will be turned on. |
| Dev DC Y | If “OK” key is pushed after “ON” displayed, Dev DC Y will be turned on. |
| Dev DC M | If “OK” key is pushed after “ON” displayed, Dev DC M will be turned on. |
| Dev DC C | If “OK” key is pushed after “ON” displayed, Dev DC C will be turned on. |
| Dev DC K | If “OK” key is pushed after “ON” displayed, Dev DC K will be turned on. |
| Dev AC Y | If “OK” key is pushed after “ON” displayed, Dev AC Y will be turned on. |
| Dev AC M | If “OK” key is pushed after “ON” displayed, Dev AC M will be turned on. |
| Dev AC C | If “OK” key is pushed after “ON” displayed, Dev AC C will be turned on. |
| Dev AC K | If “OK” key is pushed after “ON” displayed, Dev AC K will be turned on. |
| Dev TR Y | If “OK” key is pushed after “ON” displayed, Dev TR Y will be turned on. |
| Dev TR M | If “OK” key is pushed after “ON” displayed, Dev TR M will be turned on. |
| Dev TR C | If “OK” key is pushed after “ON” displayed, Dev TR C will be turned on. |
| Dev TR K | If “OK” key is pushed after “ON” displayed, Dev TR K will be turned on. |
| P Charger | If “OK” key is pushed after “ON” displayed, Paper Charger will be turned on. |

### 8. Reset Param

| Item | Description |
|---|---|
| Reset ColorReg | “YES” is Selected, reset color registration starts. |

(Take care of this menu because all color regi. data is initialized.)

### 9. Print Test

| Item | Description |
|---|---|
| Pattern Print | “YES” is Selected, pattern printing starts. |

# 4.1.5 Error Message

| Message | Explanation | Solution |
|---|---|---|
| [yyy]<br>Cassette Out | The tray cassette is not properly closed. | To close the tray, lower the rear edge align it with the slot, and slide it into the printer. |
| [yyy]<br>Paper Empty | There is no paper in the tray. | Load paper in the tray. |
| ADC Not Confirm Error | There is a problem in the ADC (Analog to Digital Converter) of your machine. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| ADC Slope Error Cycle Power | The temperature slope for ADC (Analog to Digital Converter) shows the value out of the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Adjusting... Registration | The machine is adjusting the color registration. | Please, wait a few minutes. |
| CTD Calibration Error | The CTD (Color Toner Density) Calibration has invalid value. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Deve Motor Locked | There is a problem with the deve motor which moves the toner supply device. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Door Open | The front cover or the top cover is not securely latched. | Close the cover until it locks into place. |
| Duplex Jam 0 Check Inside | Paper has jammed during duplex printing. It is applicable only for the machine with this feature. | Clear the jam. |
| Duplex Jam 1 Open/Close Door | Paper has jammed during duplex printing. It is applicable only for the machine with this feature. | Clear the jam. |
| Duplex Jam 2 Check Inside | Paper has jammed during duplex printing. It is applicable only for the machine with this feature. | Clear the jam. |
| Fuser Fan Locked | There is a problem with the fan for the fuser unit. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Humidity Open Cycle Power | The humidity exceeds the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Humidity Out Cycle Power | The humidity is fell under the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Inner Temp. Open Cycle Power | The inner temperature of the machine is over the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Inner Temp. Short Cycle Power | The inner temperature of the machine is under the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Install Transfer Belt | The transfer belt is not installed. | Install a Samsung-genuine transfer belt. |

| Message | Explanation | Solution |
|---|---|---|
| Install Toner ▼ | The color toner cartridge which the arrow indicates is not installed. | Install the corresponding toner cartridge with a Samsung-genuine cartridge. |
| Invalid Toner ▼ | The color toner cartridge which the arrow indecates is not suitable for your machine. | Install the corresponding toner cartridge with a Samsung-genuine cartridge. |
| Invalid Transfer Belt | The transfer belt is not for your machine. | Install the Samsung-Invalid genuine transfer belt for your machine. |
| IP Conflict | The network IP address you have set is being used by someone else. | Check the IP address and reset it if necessary. |
| Load Manually Press Stop Key | The multi-purpose tray is empty in manual feed mode. | |
| Load [xxx] In [yyy] | There is no correspondingpaper in the corresponding tray. | Load corresponding paper in the corresponding tray. |
| Low Heat Error Cycle Power | The fuser unit is low-heated. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Low Power | The machine is in the previous stage of the power save mode. | When data is received, it switches to on-line automatically. |
| LSU C-Hsync Err. Cycle Power | There is a problem in the laser beam detecting device of the LSU (Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU C-Motor Err. Cycle Power | There is a problem in the LSU (Laser Scanning Unit) motor. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU Hsync Error Cycle Power | There is a problem in the laser beam detecting device of the LSU (Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU M-Hsync Err. Cycle Power | There is a problem in the laser beam detecting device of the LSU (Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU M-Motor Err. Cycle Power | There is a problem in the LSU (Laser Scanning Unit) motor. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU Motor Error Cycle Power | There is a problem in the LSU (Laser Scanning Unit) motor. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU Y-Hsync Err. Cycle Power | There is a problem in the laser beam detecting device of the LSU (Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| LSU Y-Motor Err. Cycle Power | There is a problem in the LSU (Laser Scanning Unit) motor. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Main Motor Locked | There is a problem with the main motor for the machine. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| MP Tray Paper Jam 0 | Paper has jammed in the multi-purpose tray. | Clear the jam. |
| New Fuser Error | The problem has occurred in the newly installed fuser unit. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |

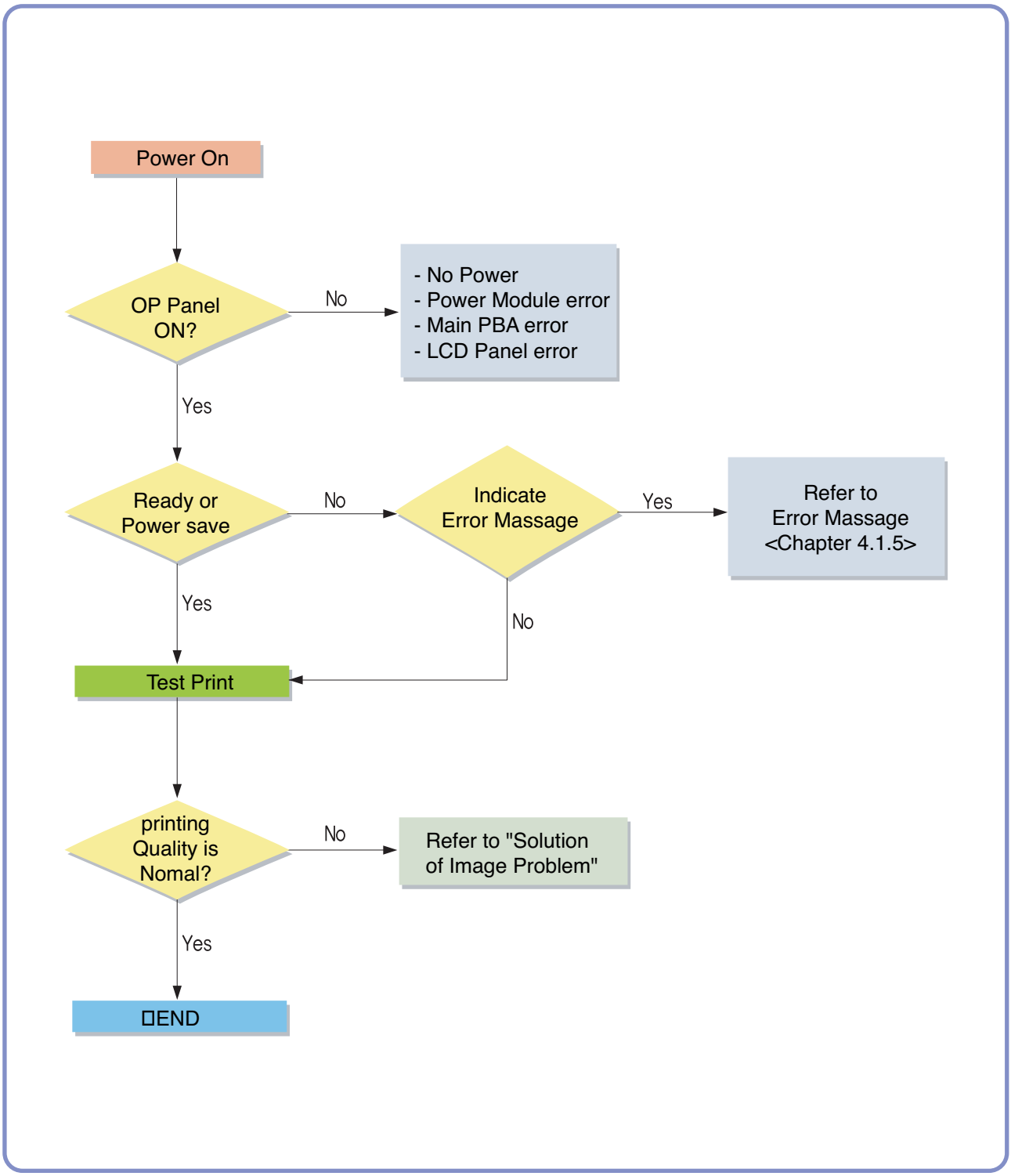
| Message | Explanation | Solution |
|---|---|---|
| Non Genuine Toner ▼ | The color toner cartridge which the arrow indecates may be recycled-toner. | Install the corresponding toner cartridge with a Samsung-genuine cartridge. |
| Open Heat Error Cycle Power | The temperature for the fuser unit is over the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Outer Temp.Open Cycle Power | The outer temperature of the machine is over the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Outer Temp.Short Cycle Power | The outer temperature of the machine is under the normal range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Over Heat Error Cycle Power | The fuser unit is overheated. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Paper Jam 1 Open/Close Door | Paper has jammed inside the machine. | Clear the jam. |
| Paper Jam 2 Check Inside | Paper has jammed in the paper exit area. | Clear the jam. |
| Remove Jam Open/Close Door | Paper has jammed in the fuser area. | Clear the jam. |
| Replace Fuser | The life of the fuser unit is expired. | Replace the fuser unit with a new one. Please, contact the service representatives. |
| Replace Fuser Soon | The life of the fuser unit will be expired soon. | Replace the fuser unit with a new one. Please, contact the service representatives. |
| Replace Toner ▼ | This message appears between Toner Low and Toner Empty. | Replace the corresponding toner cartridge with a Samsung-genuine cartridge. The arrow indicates which color toner cartridge has to be replaced. |
| Replace Transfer Belt | The life of the transfer belt is expired. | Replace the fuser unit with a new one. Please, contact the service representatives. |
| Replace Transfer Belt Soon | The life of the transfer belt will be expired soon. | Replace the transfer belt with a new one. Please, contact the service representatives. |
| Replace tray Pick-Roller | The life of the tray pick-roller expired. | Replace the fuser unit with a new one. Please, contact the service representatives. |
| Self Diagnostics LSU | The LSU (Laser Scanning Unit) in your machine is checking some problems detected. | Please, wait a few minutes. |
| Self Diagnostics Temperature | The engine in your machine is checking some problemd detected. | Please, wait a few minutes. |
| Sleeping... | The machine is in the power save mode. | When data is received, it switches to on-line automatically. |
| System Fan Locked | There is a problem with the main fan for the machine. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Thermistor Open Cycle Power | There is a problem in the temperature sensing device for the fuser unit. This device detects value over the normal value range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |

| Message | Explanation | Solution |
|---|---|---|
| Thermistor Short<br>Cycle Power | There is a problem in the temperature sensing device for the fuser unit. This device detects value under the normal value range. | Unplug the power cord and plug it back in. If the problem persists, contact the service representatives. |
| Toner Empty<br>▼ | The color toner cartridge which the arrow indicates has run out. | Replace the corresponding toner cartridge with a Samsung-genuine cartridge. |
| Toner Low<br>▼ | The color toner cartridge which the arrow indicates is almost empty. | Take out the corresponding toner cartridge and thoroughly shake it.<br>By doing this, you can temporarily reestablish printing operations. |
| Tray 2<br>Paper Jam 0 | Paper has jammed in the optional tray. | Clear the jam. |

# 4.2 Troubleshooting

## 4.2.1 Procedure of Checking the Symptoms

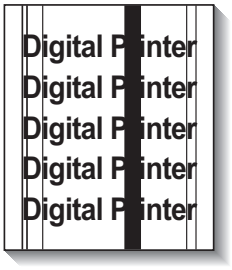
Before attempting to repair the printer first obtain a detailed description of the problem from the customer.

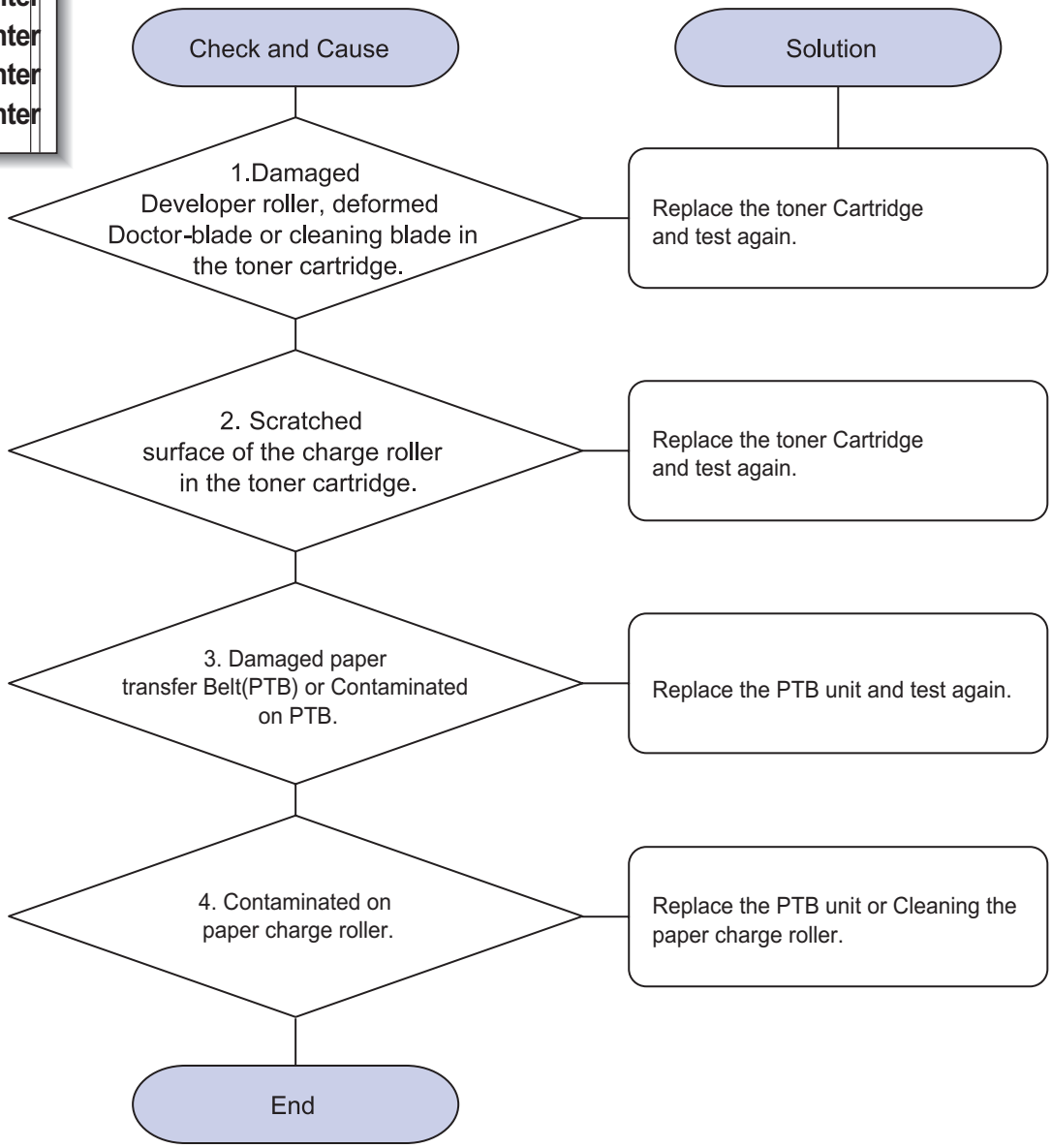


# 4.2.2 The cause and solution of image quality

## 1) Vertical Black Line and Band

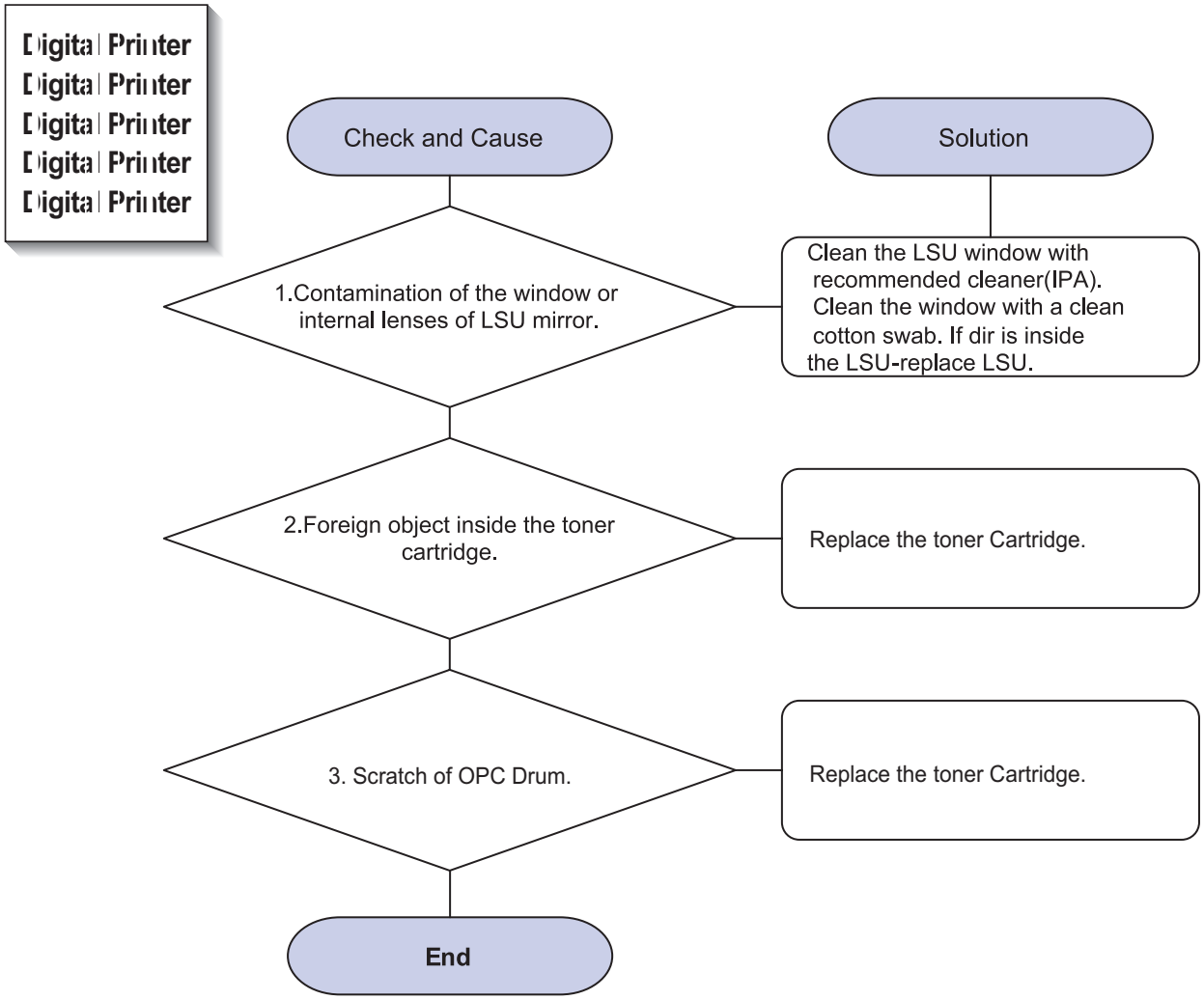
Description: 1. Straight thin black vertical lines are shown in the print-out.
2. Dark black vertical bands are shown in the print-out.





Check and Cause
Solution
1.Damaged Developer roller, deformed Doctor-blade or cleaning blade in the toner cartridge.
Replace the toner Cartridge and test again.
2. Scratched surface of the charge roller in the toner cartridge.
Replace the toner Cartridge and test again.
3. Damaged paper transfer Belt(PTB) or Contaminated on PTB.
Replace the PTB unit and test again.
4. Contaminated on paper charge roller.
Replace the PTB unit or Cleaning the paper charge roller.
End

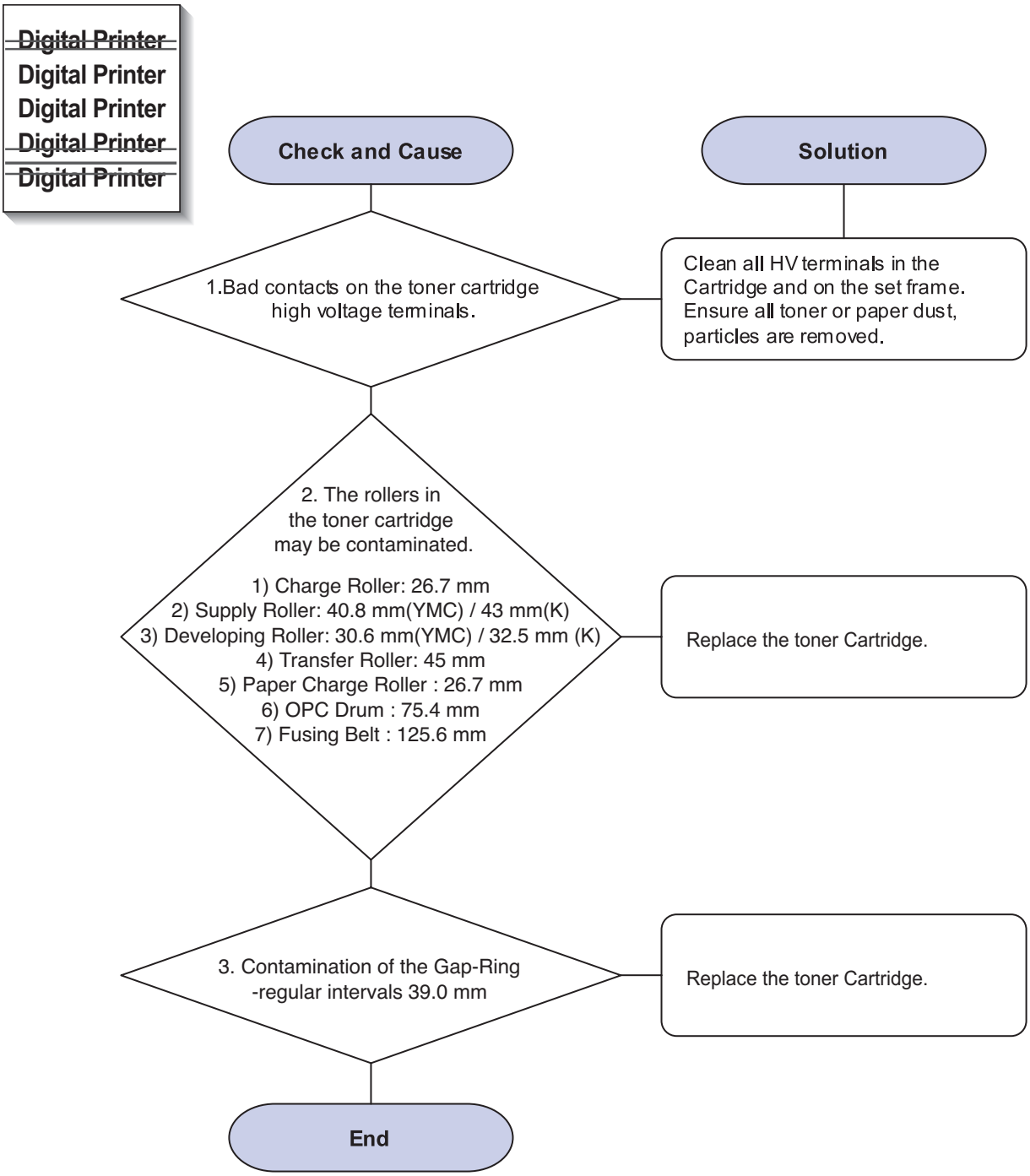
## 2) Vertical White Line

Description: White vertical voids in the image.


Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer
Check and Cause
Solution
1.Contamination of the window or internal lenses of LSU mirror.
Clean the LSU window with recommended cleaner(IPA). Clean the window with a clean cotton swab. If dir is inside the LSU-replace LSU.
2.Foreign object inside the toner cartridge.
Replace the toner Cartridge.
3. Scratch of OPC Drum.
Replace the toner Cartridge.
End

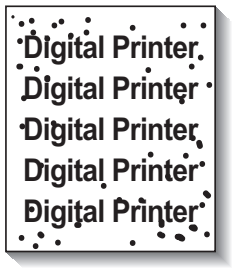
### 3) Horizontal Black Bands

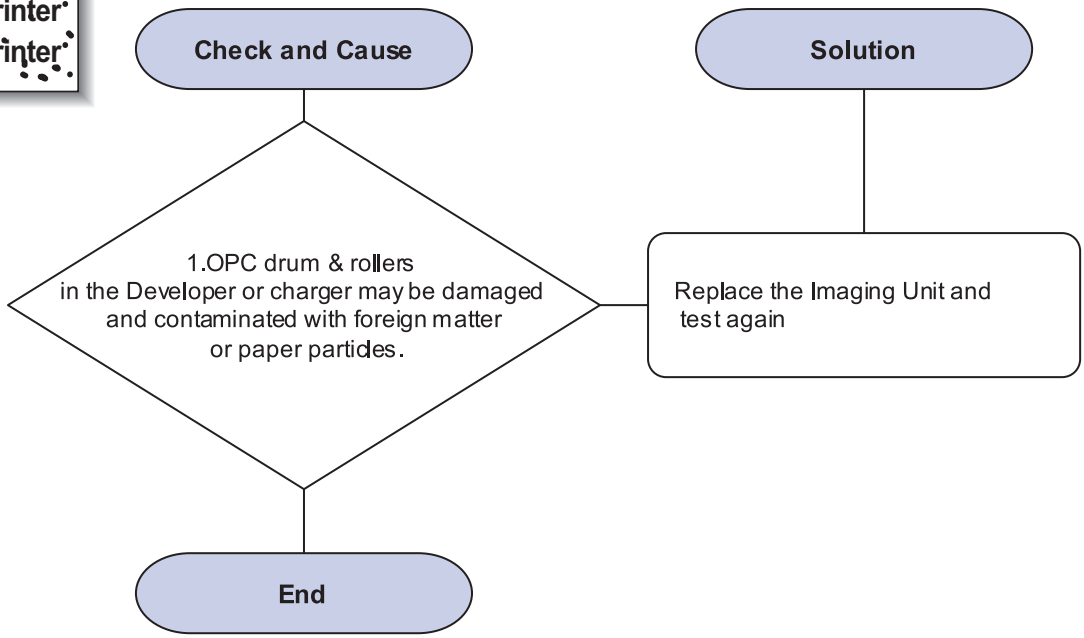
Description: Dark or blurry horizontal stripes occur in the printing periodically
(These may occurs at regular intervals down the page.)


Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer
Check and Cause
Solution
1.Bad contacts on the toner cartridge high voltage terminals.
Clean all HV terminals in the Cartridge and on the set frame. Ensure all toner or paper dust, particles are removed.
2. The rollers in the toner cartridge may be contaminated.
1) Charge Roller: 26.7 mm
2) Supply Roller: 40.8 mm(YMC) / 43 mm(K)
3) Developing Roller: 30.6 mm(YMC) / 32.5 mm (K)
4) Transfer Roller: 45 mm
5) Paper Charge Roller : 26.7 mm
6) OPC Drum : 75.4 mm
7) Fusing Belt : 125.6 mm
Replace the toner Cartridge.
3. Contamination of the Gap-Ring -regular intervals 39.0 mm
Replace the toner Cartridge.
End

## 4) Black/White Spot

Description: 1. Dark or blurry spots occur periodically in the printing
2. White spots occur periodically in the printing

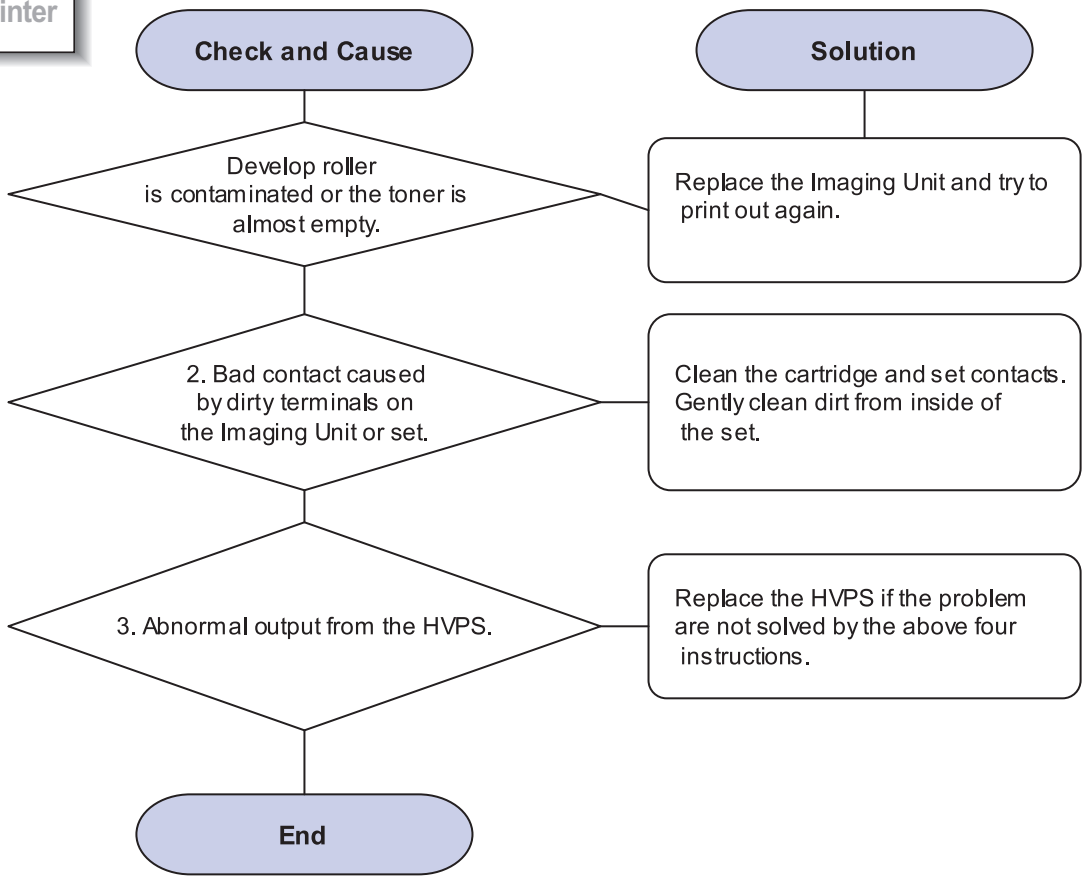


## 5) Light Image

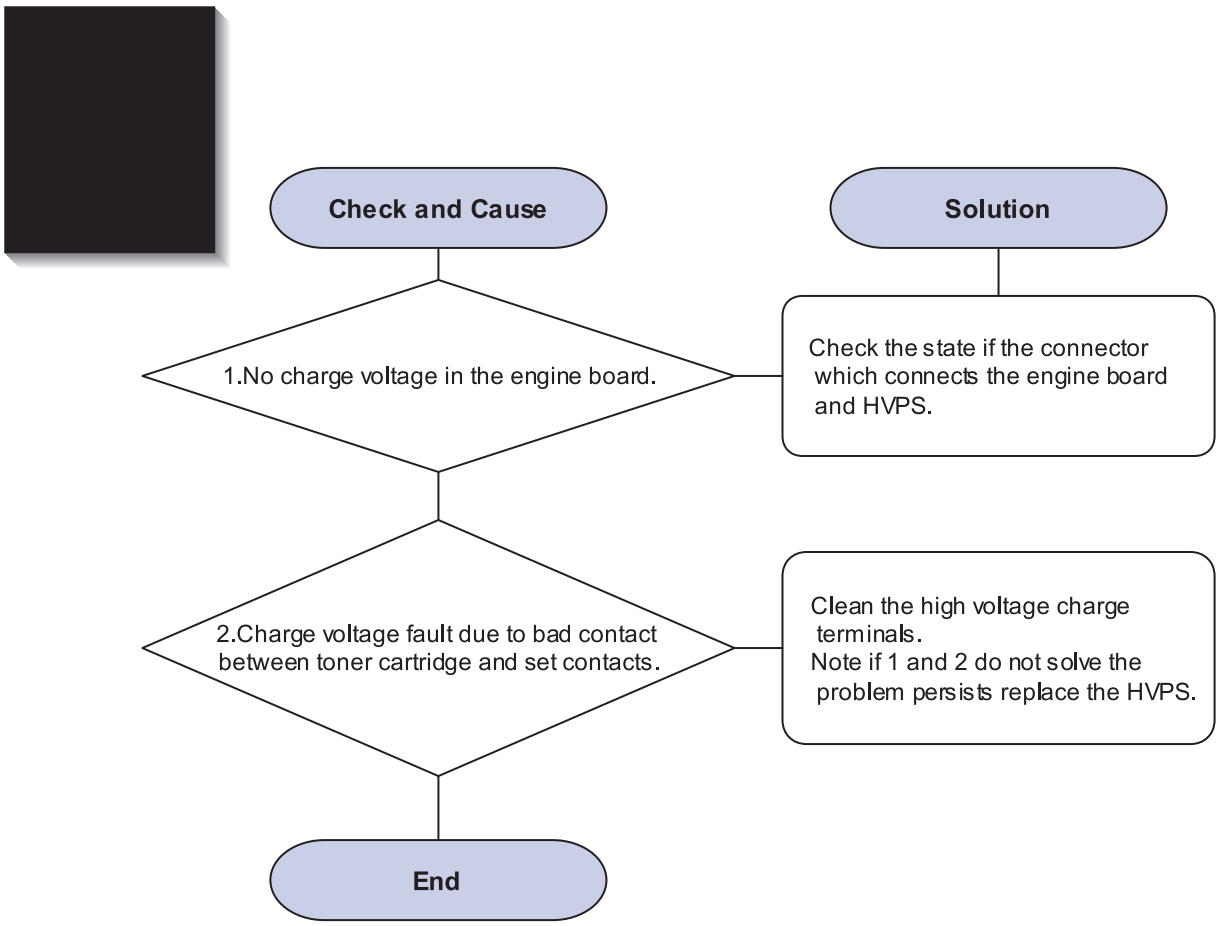
Description: The printed image is light, with no ghost.

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer


Check and Cause
Solution
Develop roller is contaminated or the toner is almost empty.
Replace the Imaging Unit and try to print out again.
2. Bad contact caused by dirty terminals on the Imaging Unit or set.
Clean the cartridge and set contacts. Gently clean dirt from inside of the set.
3. Abnormal output from the HVPS.
Replace the HVPS if the problem are not solved by the above four instructions.
End

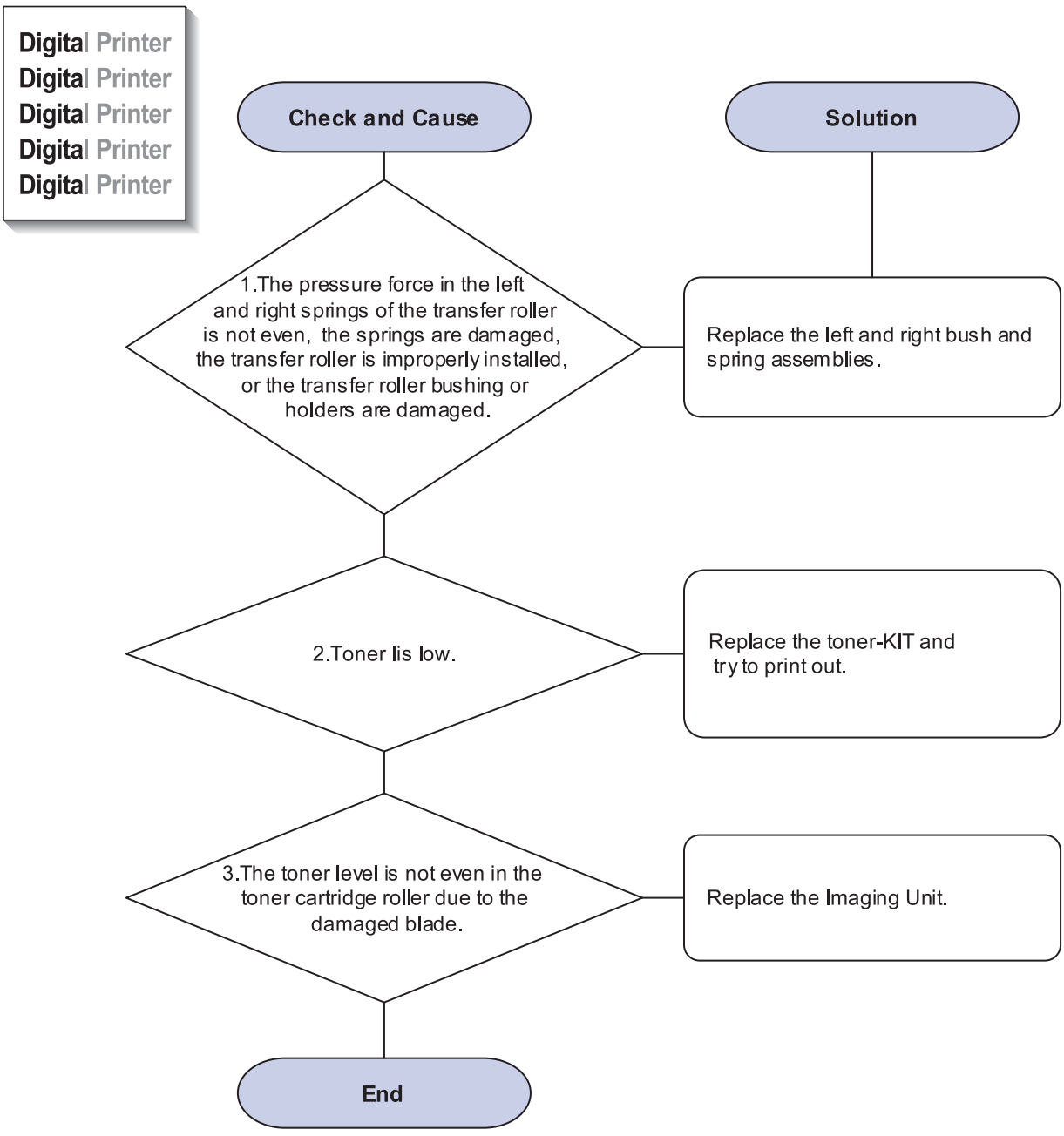
## 6) Dark image or Black

Description: The printed image is dark.


Check and Cause
Solution
1.No charge voltage in the engine board.
Check the state if the connector which connects the engine board and HVPS.
2.Charge voltage fault due to bad contact between toner cartridge and set contacts.
Clean the high voltage charge terminals.
Note if 1 and 2 do not solve the problem persists replace the HVPS.
End

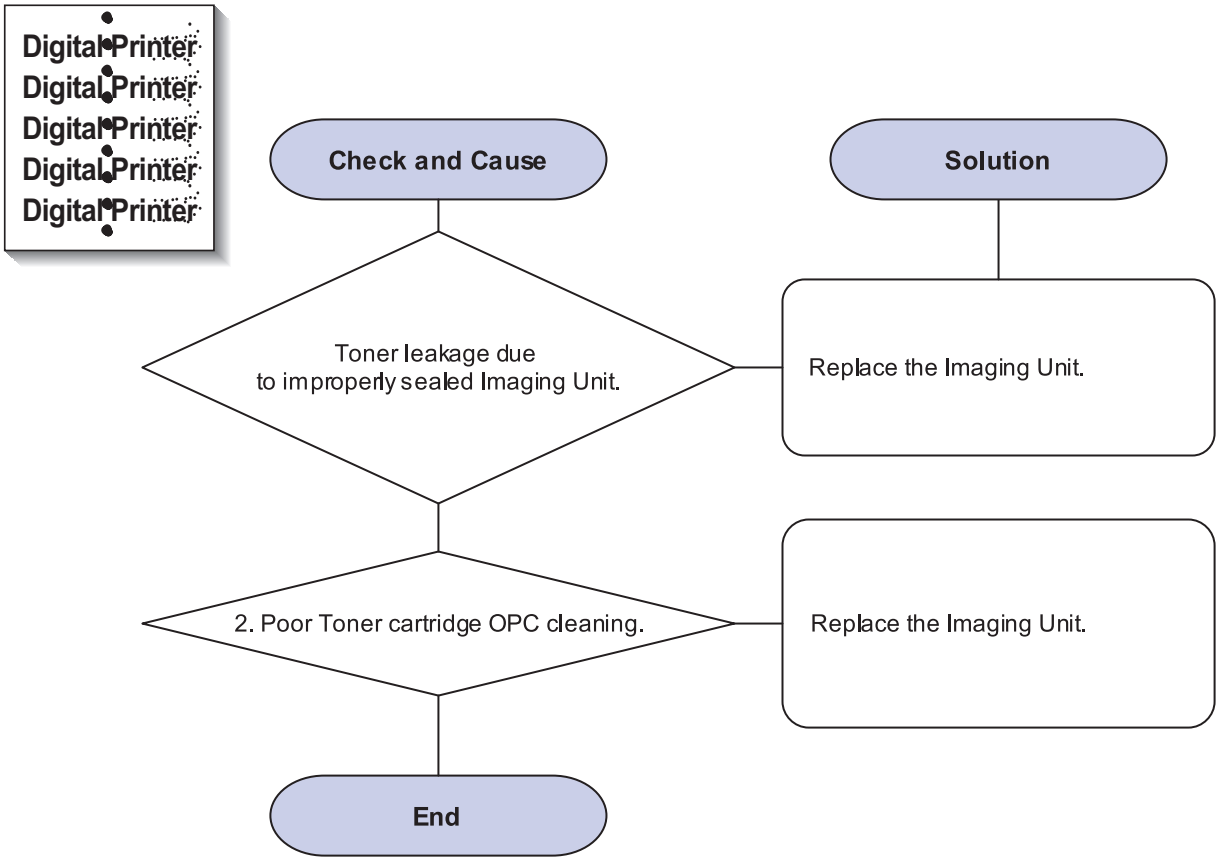
## 7) Uneven Density

Description: Print Density is uneven between left and right.


Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer
Check and Cause
Solution
1.The pressure force in the left and right springs of the transfer roller is not even, the springs are damaged, the transfer roller is improperly installed, or the transfer roller bushing or holders are damaged.
Replace the left and right bush and spring assemblies.
2.Toner lis low.
Replace the toner-KIT and try to print out.
3.The toner level is not even in the toner cartridge roller due to the damaged blade.
Replace the Imaging Unit.
End

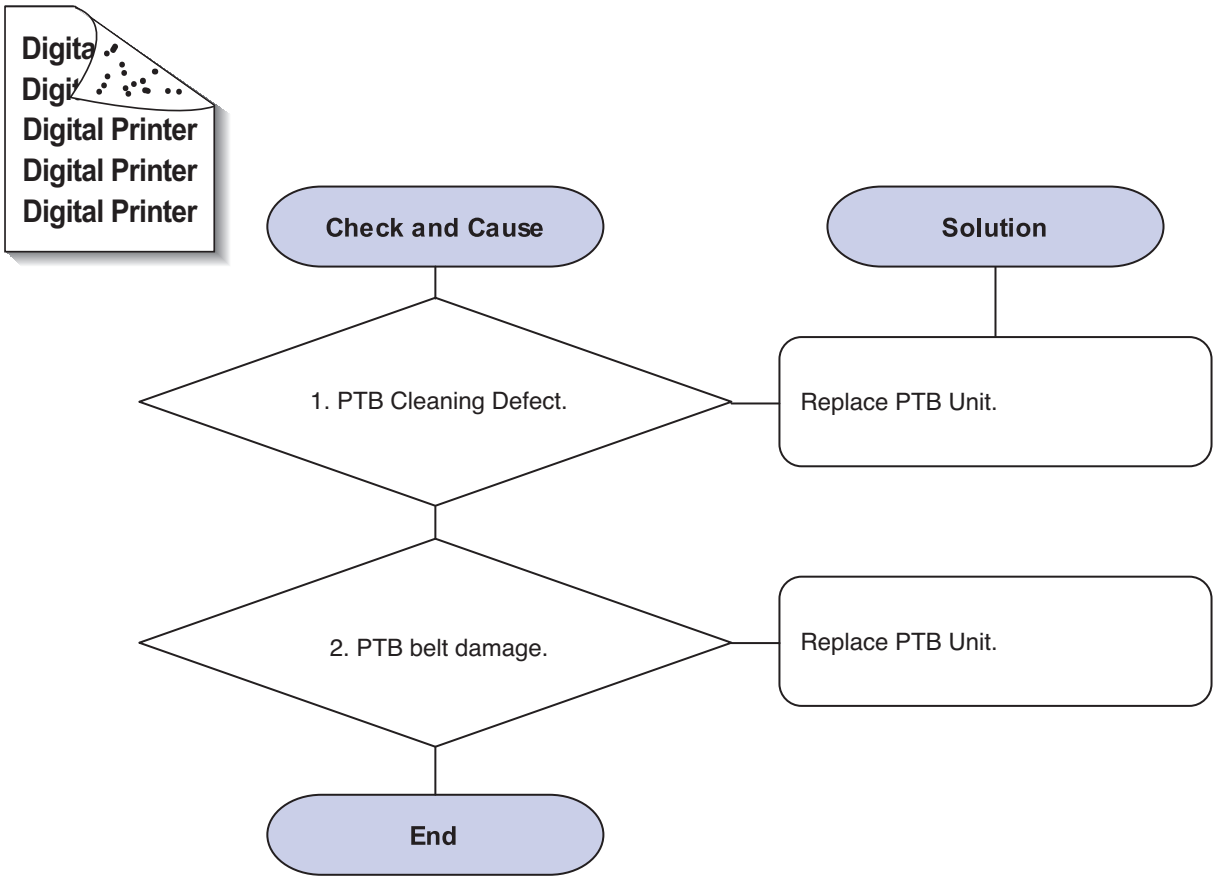
## 8) Strain in the Face of the Page

Description:The background on the face of the printed page strained



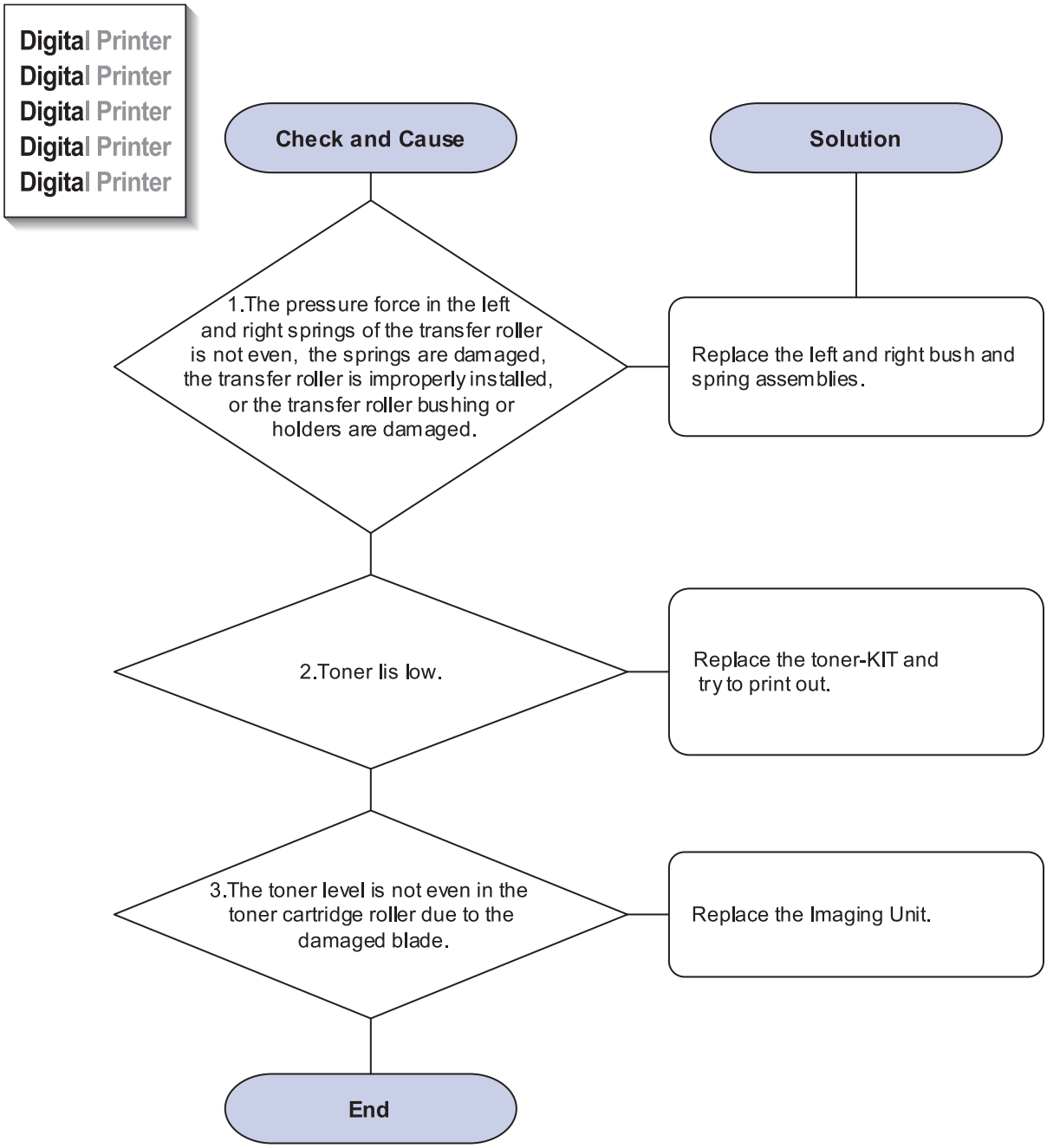
## 9) Strains on Back of Page

Description: The back of the page is strained at 43.9 or 75.5 mm intervals.



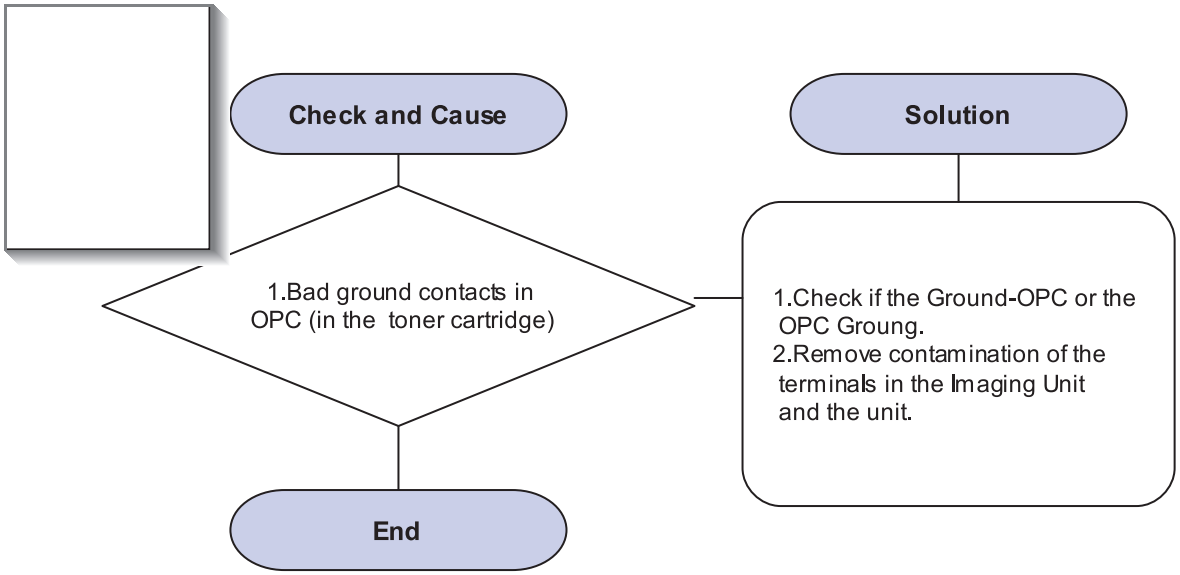
## 10) Uneven Density

Description: Print Density is uneven between left and right.


Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer
Check and Cause
Solution
1.The pressure force in the left and right springs of the transfer roller is not even, the springs are damaged, the transfer roller is improperly installed, or the transfer roller bushing or holders are damaged.
Replace the left and right bush and spring assemblies.
2.Toner lis low.
Replace the toner-KIT and try to print out.
3.The toner level is not even in the toner cartridge roller due to the damaged blade.
Replace the Imaging Unit.
End

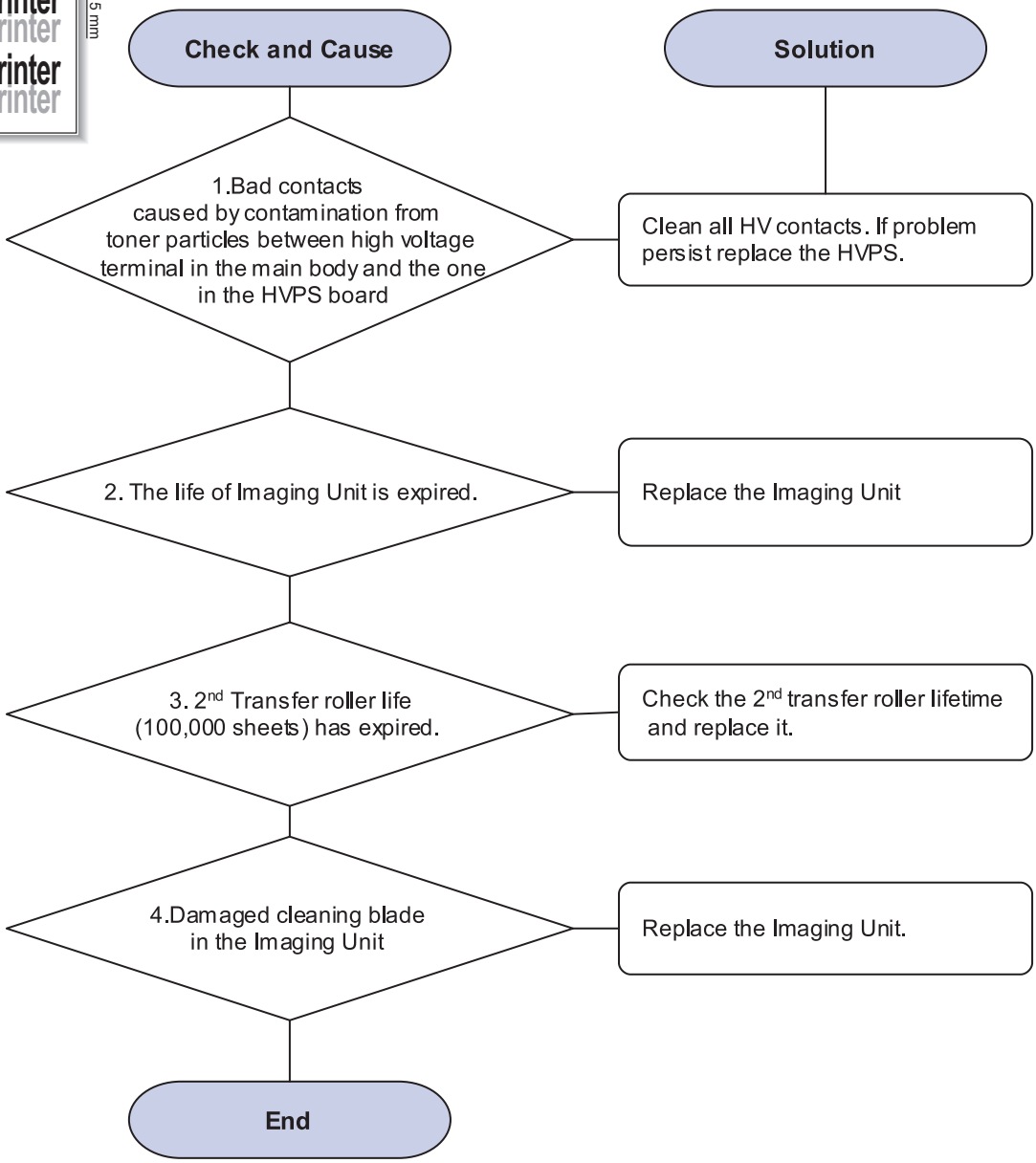
## 11) Blank Page Print out(1)

Description: Blank page is printed.


Check and Cause
Solution
1.Bad ground contacts in OPC (in the toner cartridge)
1.Check if the Ground-OPC or the OPC Groung.
2.Remove contamination of the terminals in the Imaging Unit and the unit.
End

## 12) Ghost

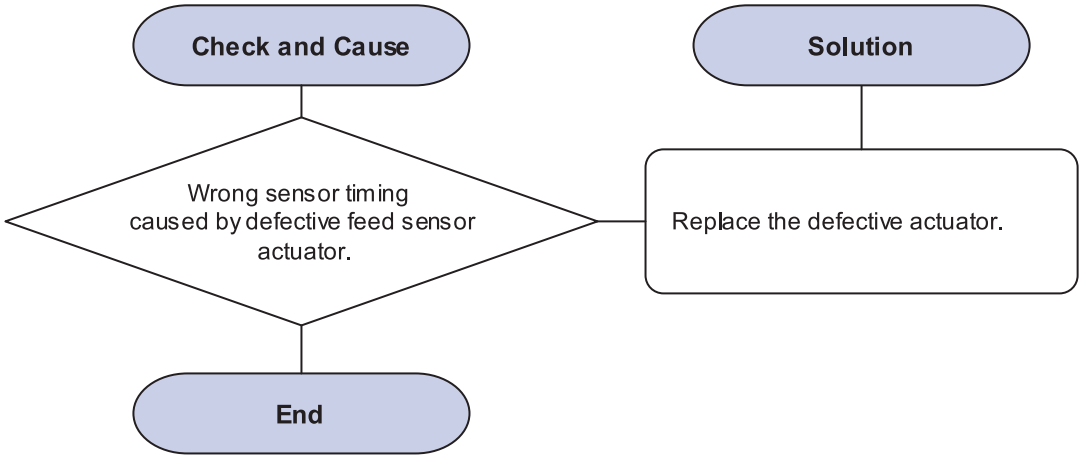
Description: Ghost occur at 75.4mm intervals of the OPC drum or 33mm intervals of the developing roller in the whole Printing


Check and Cause
Solution
1.Bad contacts caused by contamination from toner particles between high voltage terminal in the main body and the one in the HVPS board
Clean all HV contacts. If problem persist replace the HVPS.
2. The life of Imaging Unit is expired.
Replace the Imaging Unit
3. 2nd Transfer roller life (100,000 sheets) has expired.
Check the 2nd transfer roller lifetime and replace it.
4.Damaged cleaning blade in the Imaging Unit
Replace the Imaging Unit.
End

# 4.2.3 The cause and solution of the paper feeding

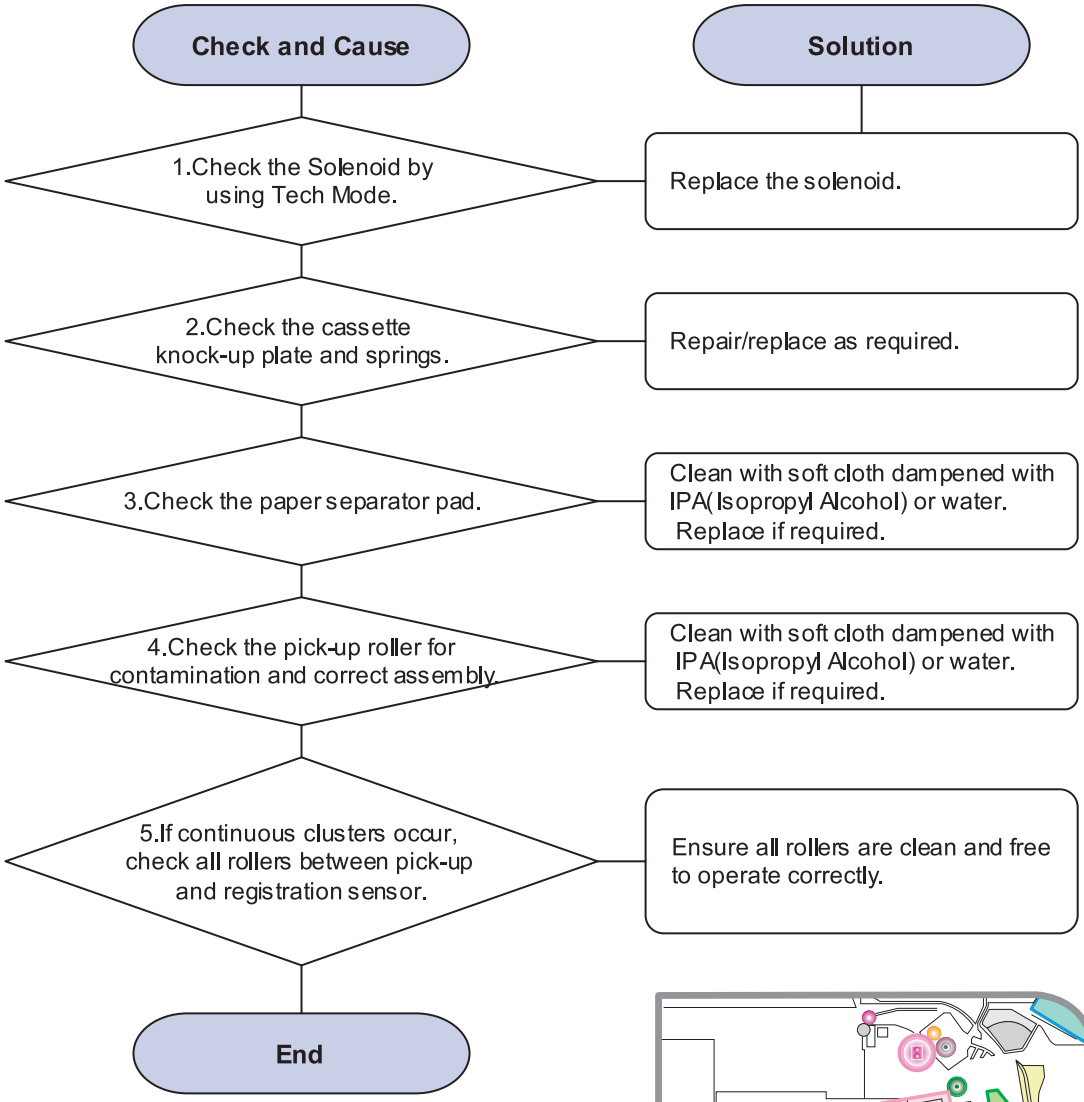
## 1) Wrong Print Position

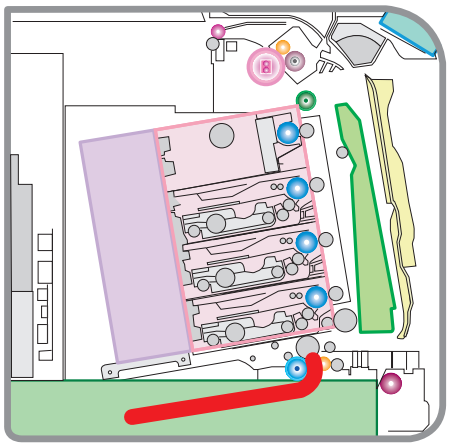
Description: Printing begins at wrong position on the paper.



## 2) JAM 0

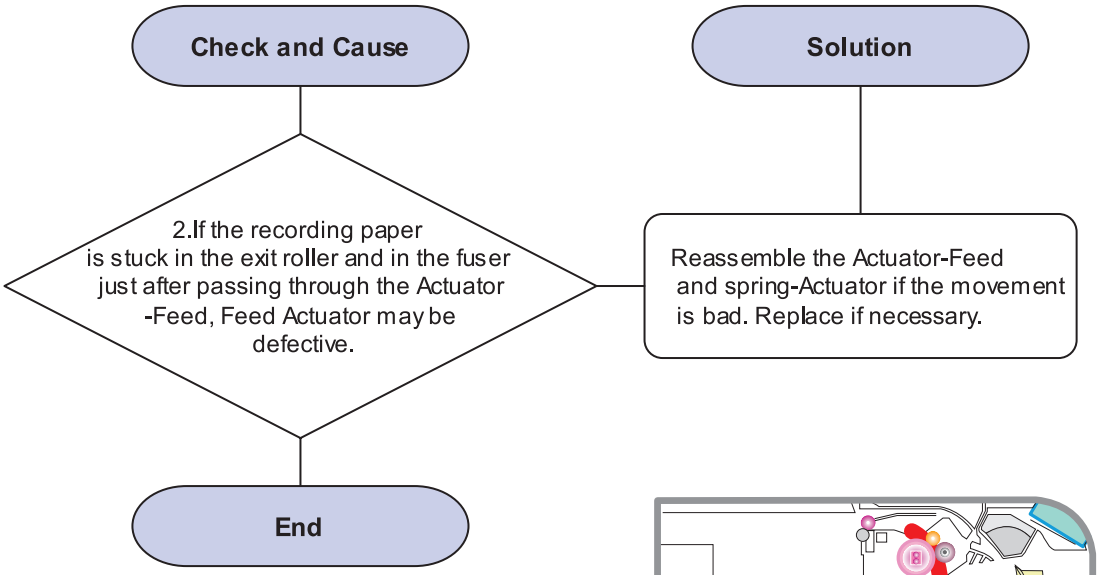
Description: 1. Paper does not exit from the cassette.
2. Jam-0 occurs when the paper feeds into the printer

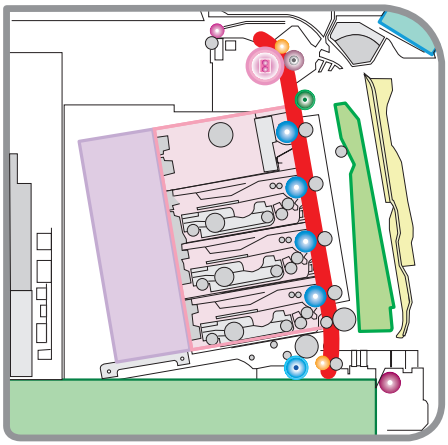

Check and Cause
Solution
1.Check the Solenoid by using Tech Mode.
Replace the solenoid.
2.Check the cassette knock-up plate and springs.
Repair/replace as required.
3.Check the paper separator pad.
Clean with soft cloth dampened with IPA( Isopropyl Alcohol) or water. Replace if required.
4.Check the pick-up roller for contamination and correct assembly.
Clean with soft cloth dampened with IPA(Isopropyl Alcohol) or water. Replace if required.
5.If continuous clusters occur, check all rollers between pick-up and registration sensor.
Ensure all rollers are clean and free to operate correctly.
End



### 3) JAM 1

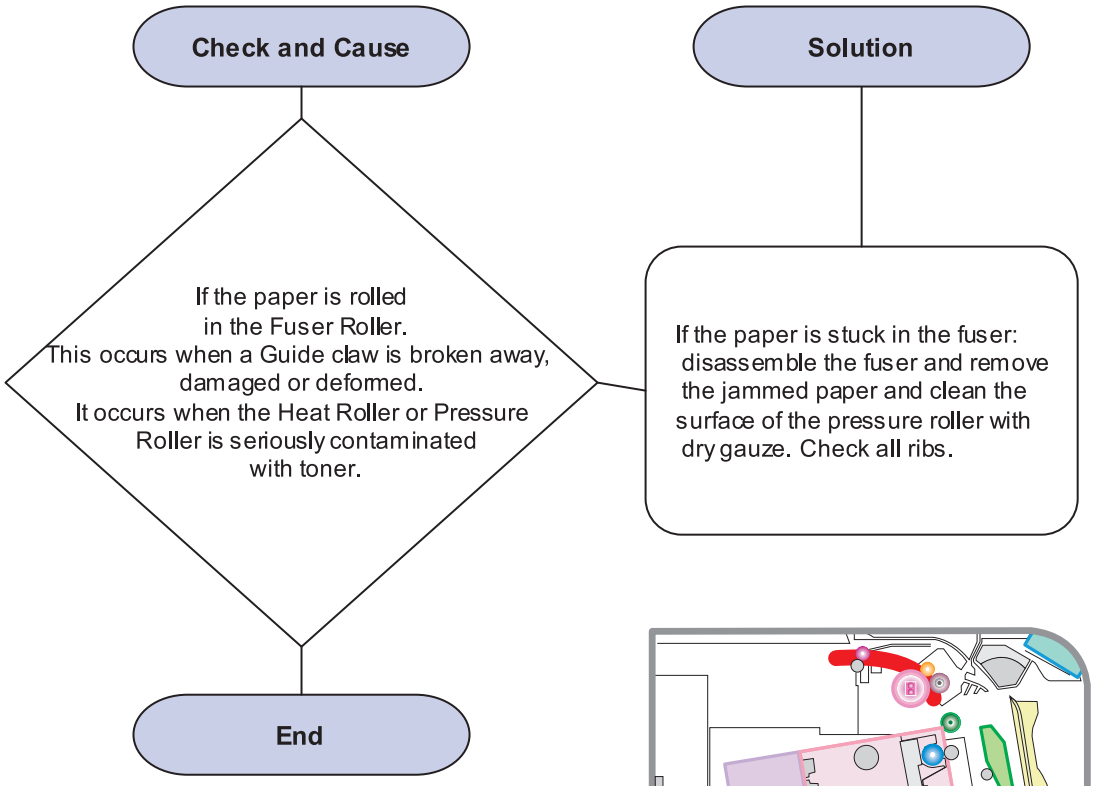
Description: 1. Paper is jammed in front of or inside the fuser.
2. Paper is stuck in the exit roller and in the fuser just after passing through the Actuator-Feed

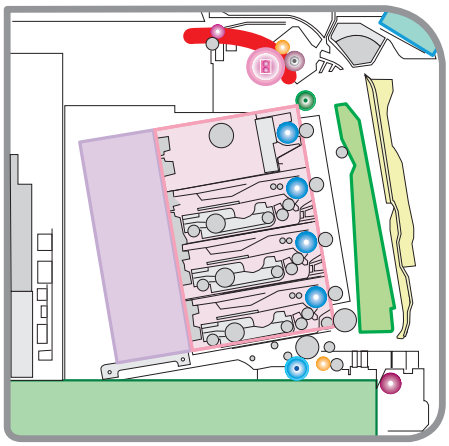

Check and Cause
Solution
2.If the recording paper is stuck in the exit roller and in the fuser just after passing through the Actuator -Feed, Feed Actuator may be defective.
Reassemble the Actuator-Feed and spring-Actuator if the movement is bad. Replace if necessary.
End



## 4) JAM 2

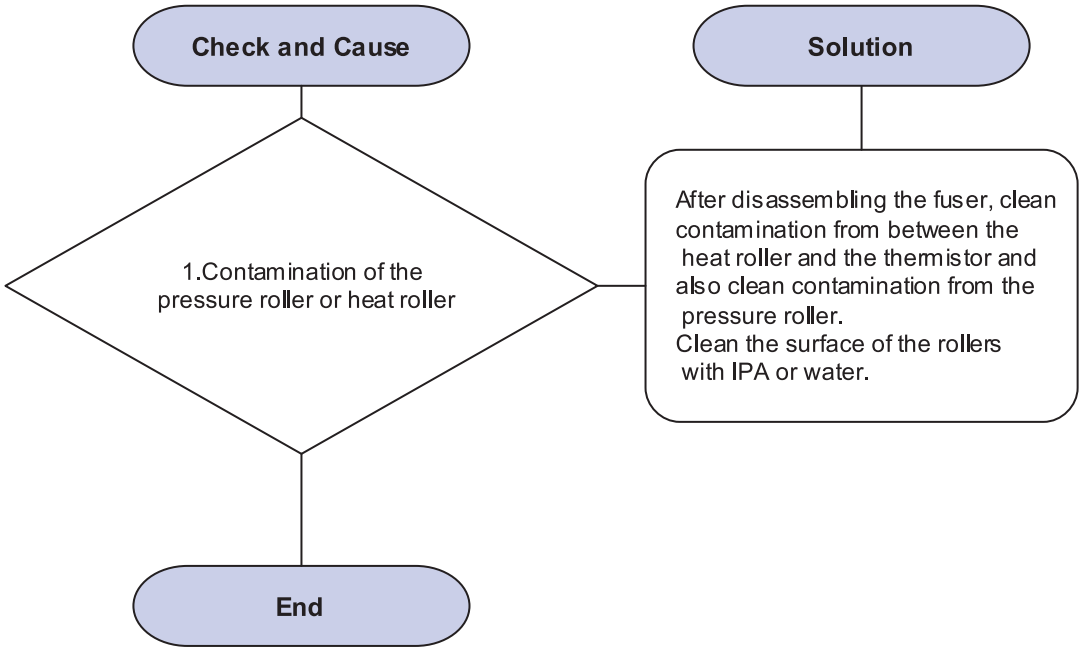
Description: 1. Recording paper is jammed in front of or inside the fuser.
2. Recording paper is stuck in the discharge roller and in the fuser just after passing through the Actuator-Feed.


Check and Cause
Solution
If the paper is rolled in the Fuser Roller. This occurs when a Guide claw is broken away, damaged or deformed. It occurs when the Heat Roller or Pressure Roller is seriously contaminated with toner.
If the paper is stuck in the fuser: disassemble the fuser and remove the jammed paper and clean the surface of the pressure roller with dry gauze. Check all ribs.
End



## 5) Paper rolled in the fuser

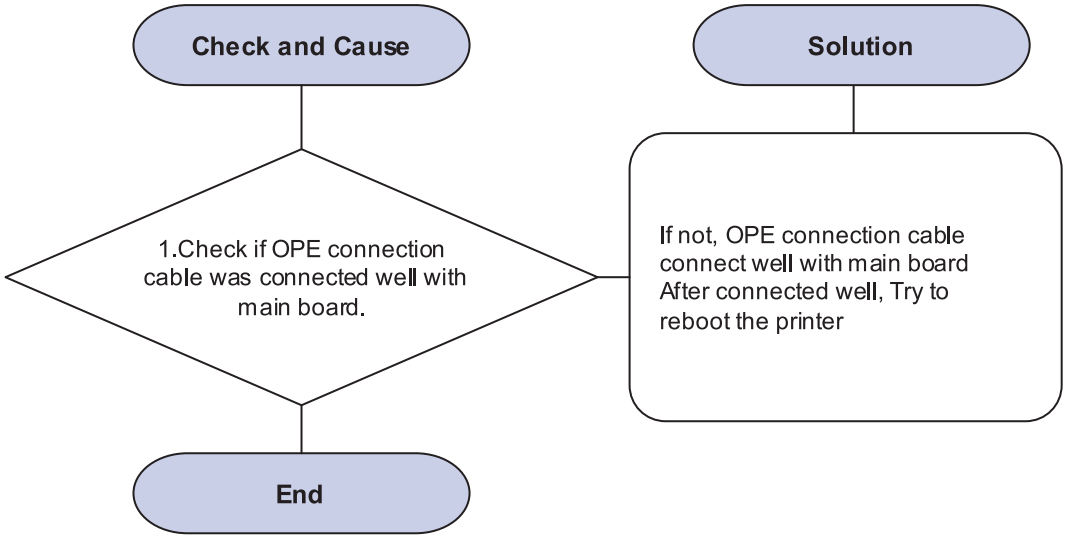
Description: Paper rolled around fuser rollers or 'Concertina' jam

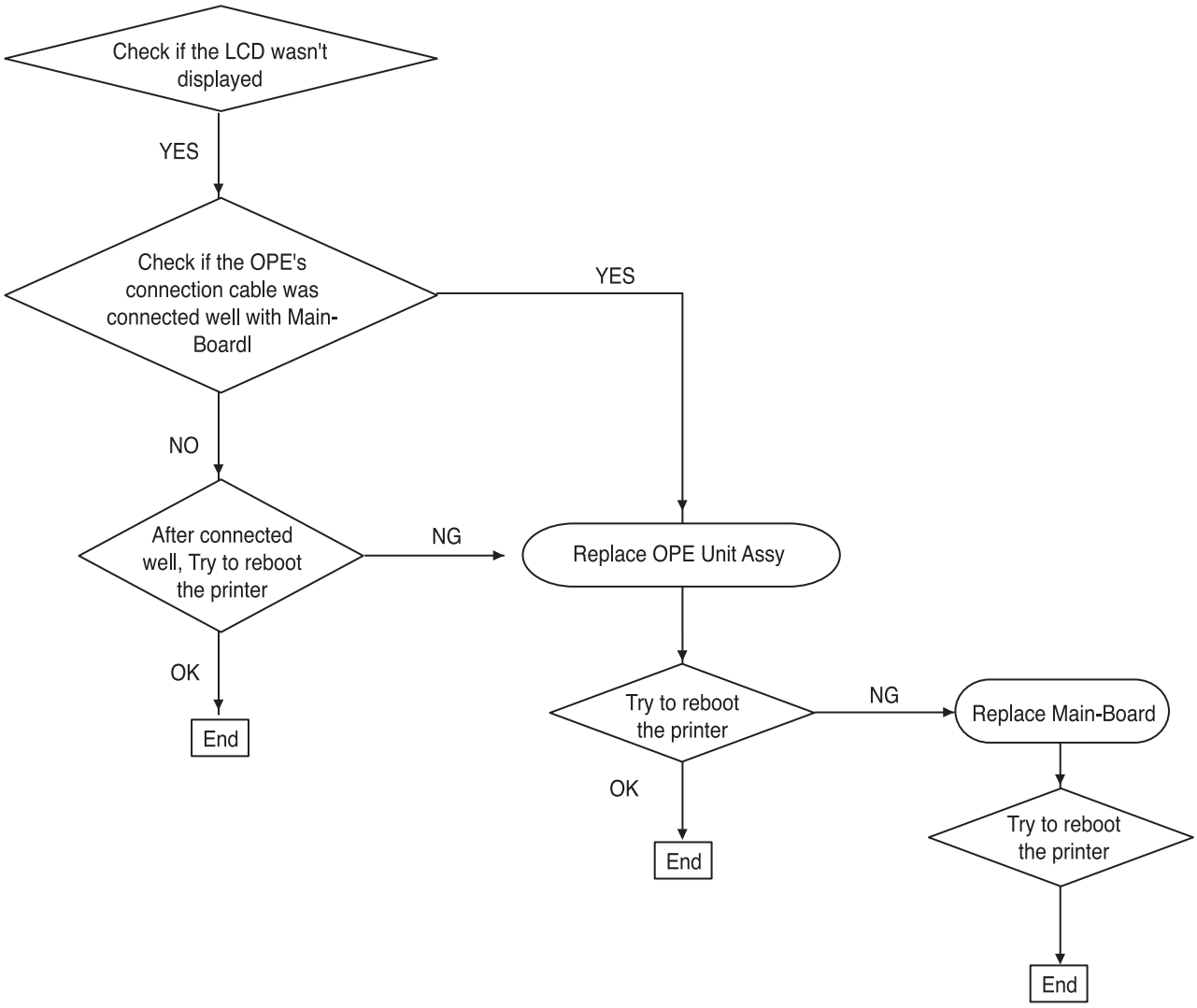

Check and Cause
Solution
1.Contamination of the pressure roller or heat roller
After disassembling the fuser, clean contamination from between the heat roller and the thermistor and also clean contamination from the pressure roller.
Clean the surface of the rollers with IPA or water.
End

## 4.2.4 OPE Problems

### 1) Nothing Displayed on LCD

Description: LCD does not display anything


Check and Cause
Solution
1.Check if OPE connection cable was connected well with main board.
If not, OPE connection cable connect well with main board After connected well, Try to reboot the printer
End


Check if the LCD wasn't displayed
YES
Check if the OPE's connection cable was connected well with Main-Boardl
YES
NO
After connected well, Try to reboot the printer
NG
Replace OPE Unit Assy
OK
End
Try to reboot the printer
NG
Replace Main-Board
OK
End
Try to reboot the printer
End

# 4.2.5 Other Problems

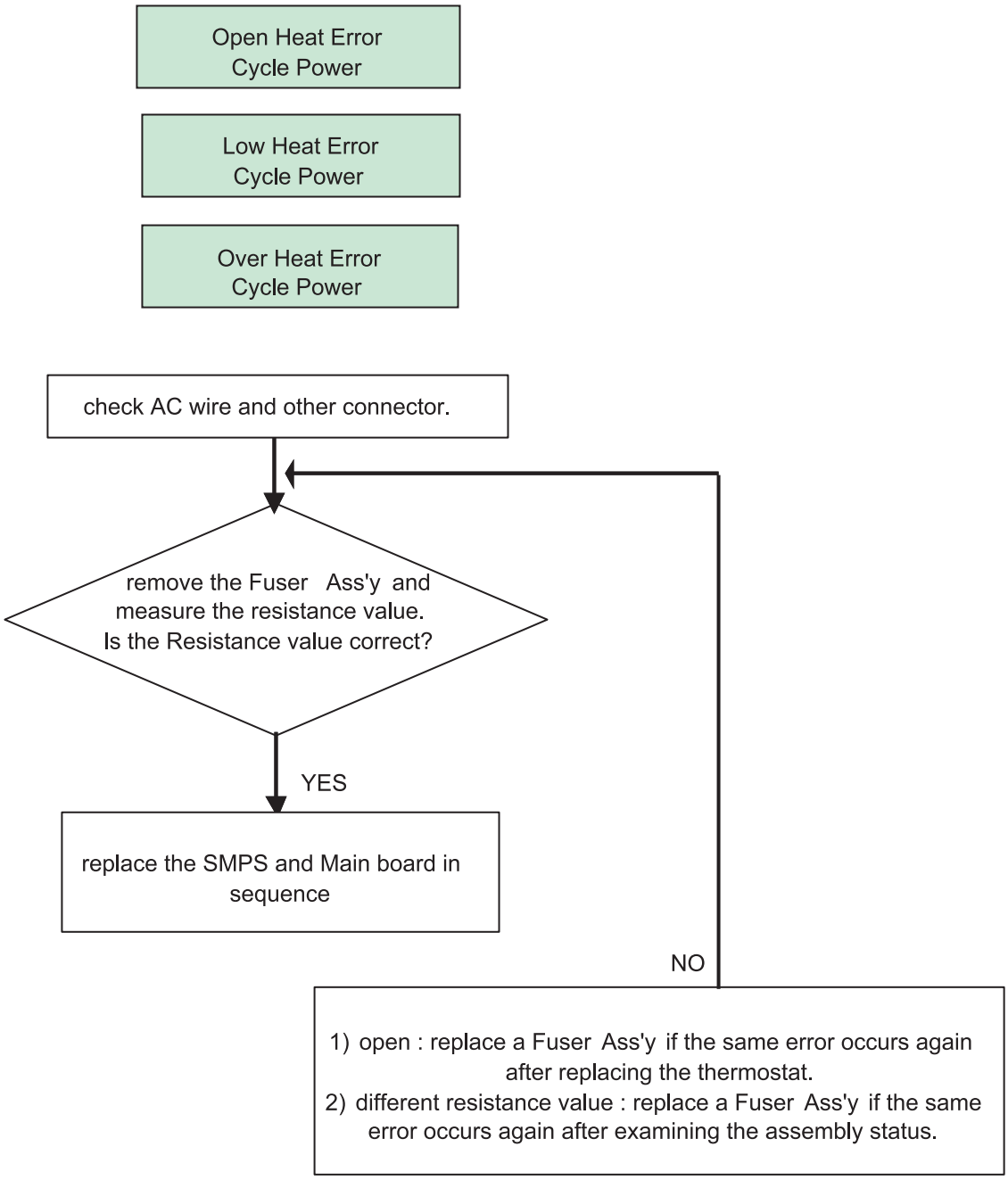
## 1)Fusing Problems

· The fuser consists of the Heat Lamp, Heat Roller, Pressure Roller, Thermistor, and Thermostat.

| Error | Phenomenon |
|---|---|
| Low Heat Error | In warm-up<br>- When the Fuser is under 50 ℃ for 45 seconds and more<br><br>In ready<br>- When the Fuser is under 130 ℃ for 10 seconds and more<br><br>In Printing state<br>- When the Fuser is under 40 ℃ of target temperature for 10 seconds and more |
| Over Heat Error | When the set is over 210 ℃ for 4 seconds and more |

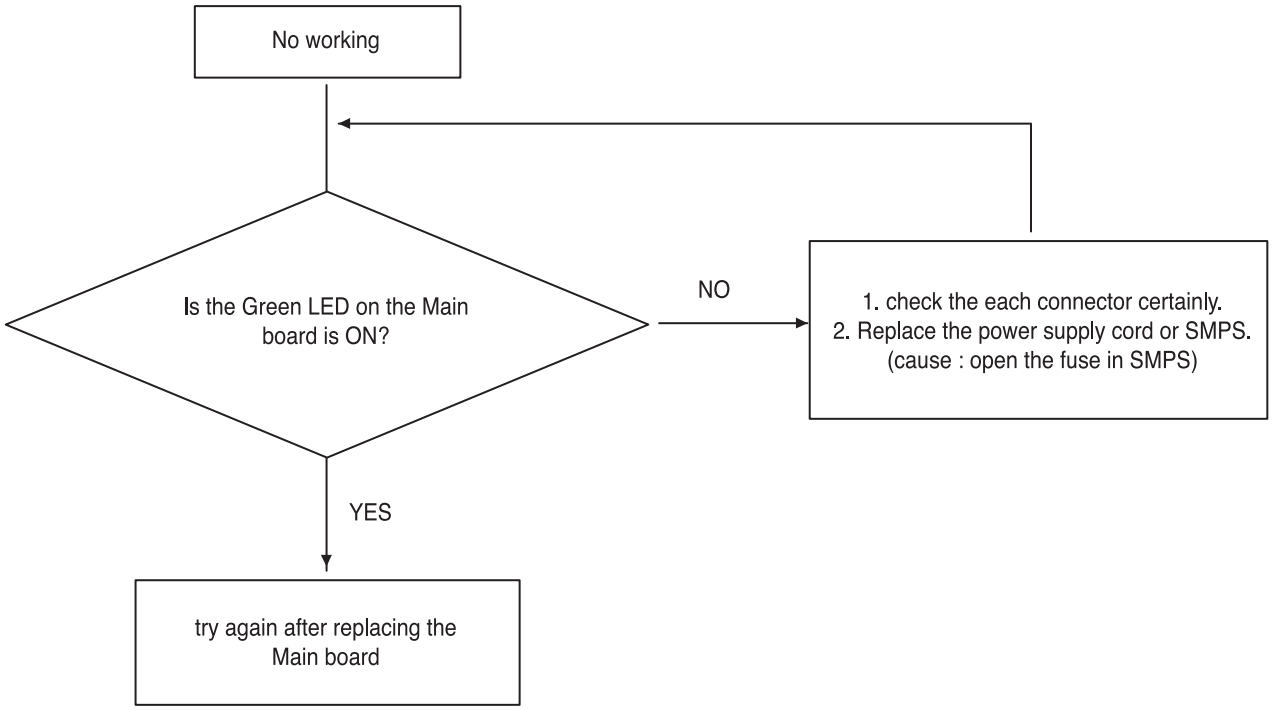
## Fuser error

Description : A message below is displayed in a LCD panel.


Open Heat Error
Cycle Power
Low Heat Error
Cycle Power
Over Heat Error
Cycle Power
check AC wire and other connector.
remove the Fuser Ass'y and measure the resistance value. Is the Resistance value correct?
YES
replace the SMPS and Main board in sequence
NO
1) open : replace a Fuser Ass'y if the same error occurs again after replacing the thermostat.
2) different resistance value : replace a Fuser Ass'y if the same error occurs again after examining the assembly status.

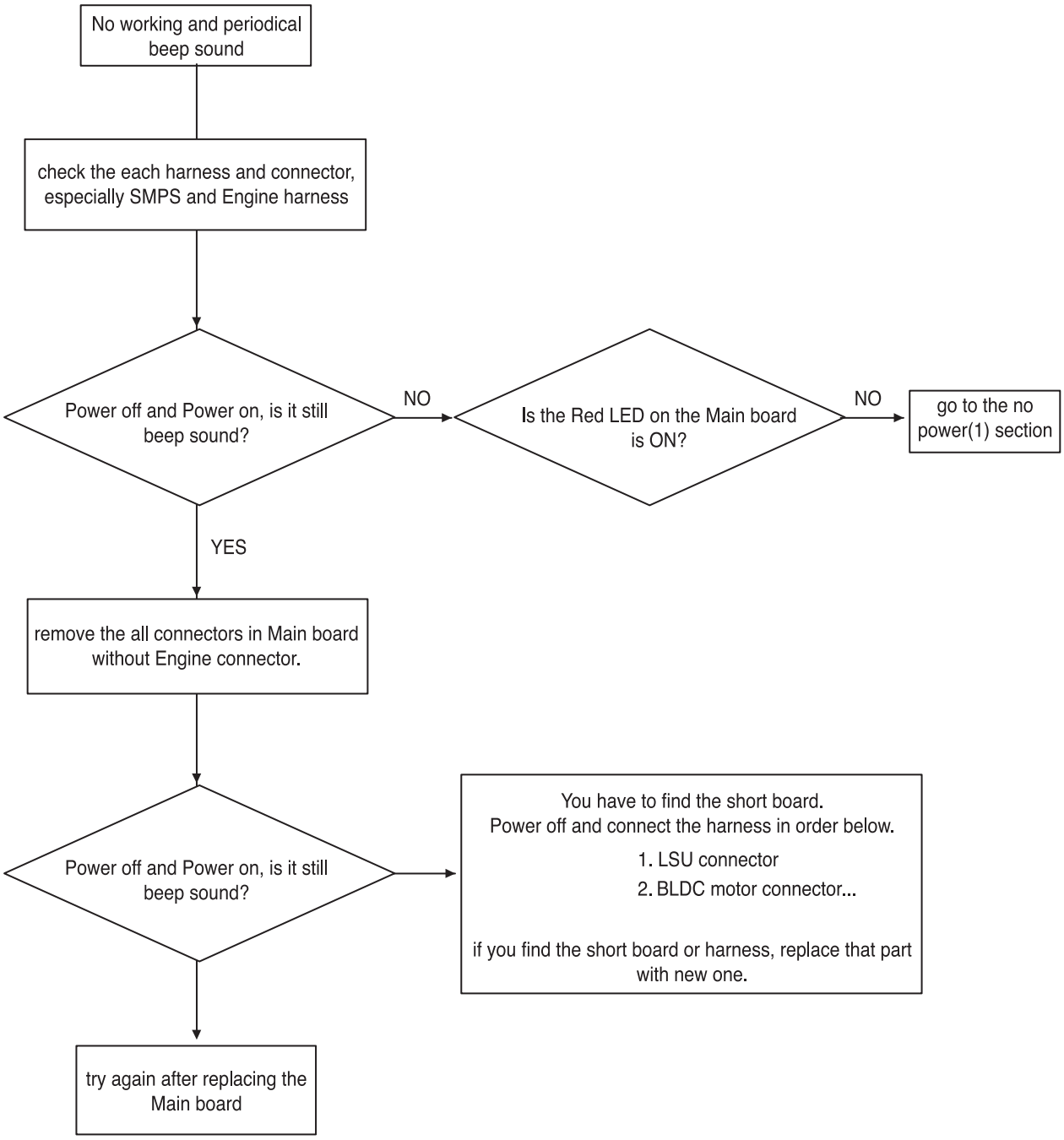
## 2) No Power(1)

Description : When system power is turned on, all LED on the operator panel do not come on.


No working
Is the Green LED on the Main board is ON?
NO
1. check the each connector certainly.
2. Replace the power supply cord or SMPS.
(cause : open the fuse in SMPS)
YES
try again after replacing the Main board

## 2) No Power(2)

Description : When system power is turned on, you can hear short beep sound continuously.


No working and periodical beep sound
check the each harness and connector, especially SMPS and Engine harness
Power off and Power on, is it still beep sound?
NO
Is the Red LED on the Main board is ON?
NO
go to the no power(1) section
YES
remove the all connectors in Main board without Engine connector.
Power off and Power on, is it still beep sound?
You have to find the short board.
Power off and connect the harness in order below.
1. LSU connector
2. BLDC motor connector...
if you find the short board or harness, replace that part with new one.
try again after replacing the Main board

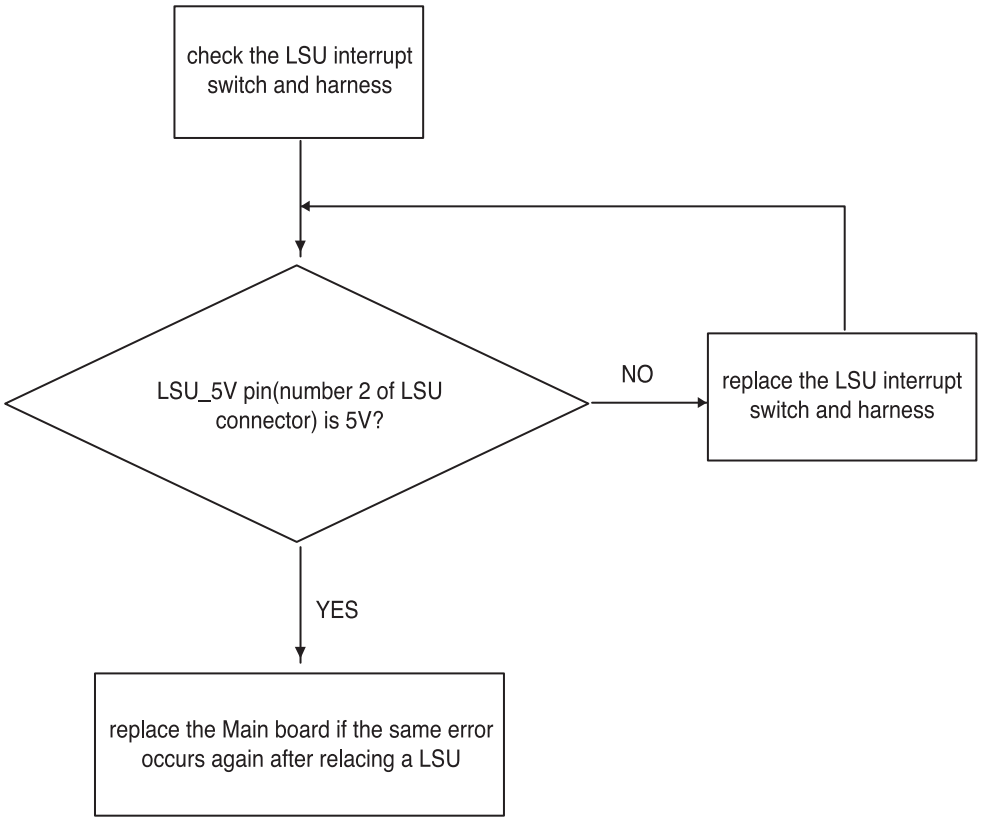
### 3) LSU Error

Description : A message below is displayed in a LCD panel.

LSU Motor Error
Cycle Power

LSU Hsync Error
Cycle Power

Self Diagnostics
LSU


check the LSU interrupt switch and harness
LSU_5V pin(number 2 of LSU connector) is 5V?
NO
replace the LSU interrupt switch and harness
YES
replace the Main board if the same error occurs again after relacing a LSU

## 4) Toner Problems

*** Cautions**

OPC unit

- No sunlight & white light exposure
- No touch (no finger print)
- No OPC cleaning with Acetone or Ethanol

PTB Unit

- No touch
- No finger print
- No sharp object
- No sunlight
- Use only IPA or Ethanol when cleaning

# 5. Exploded Views and Parts List

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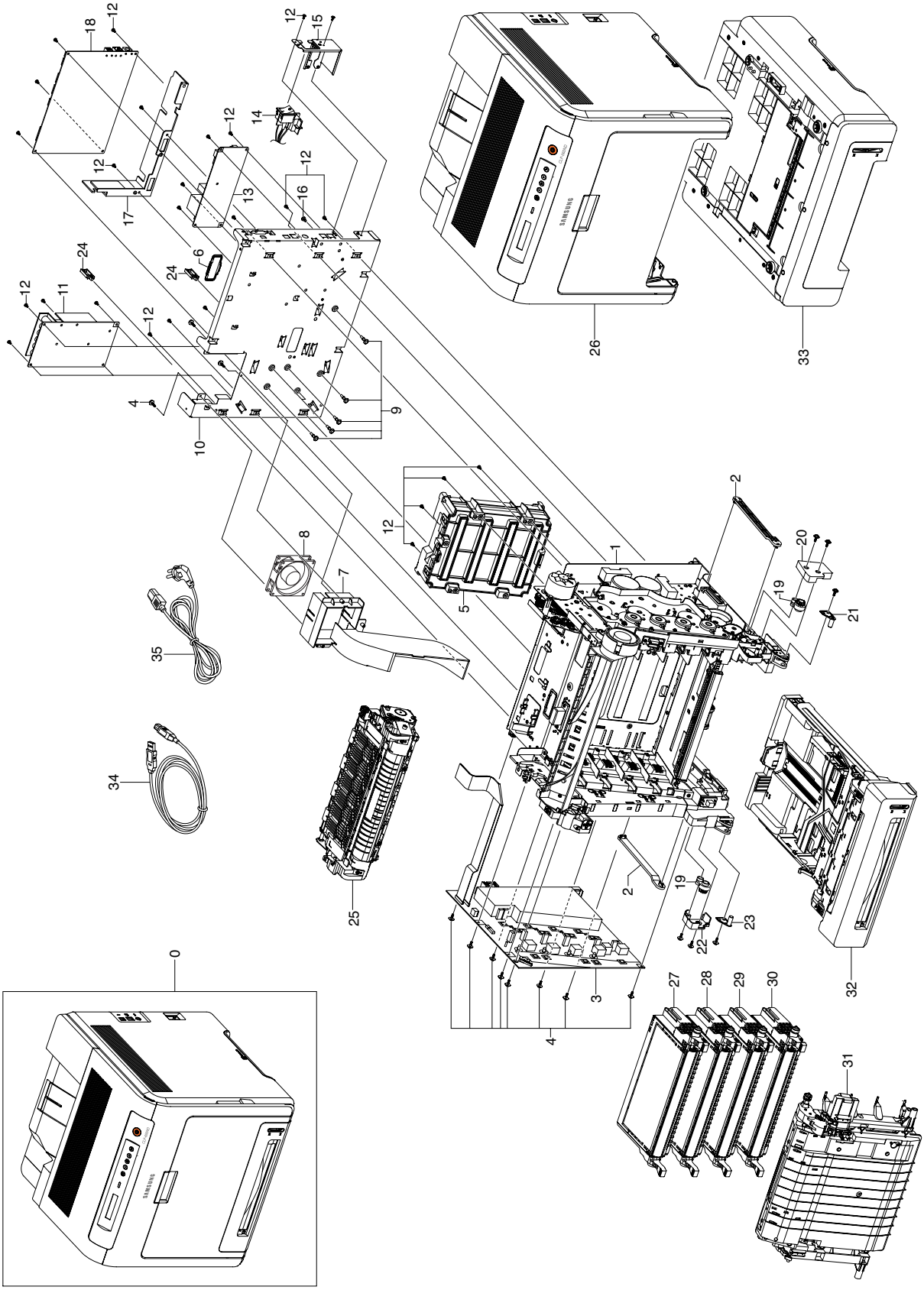
## Samsung Color Laser Printer

## The keynote of Product

**High SMB/Easy of Use Tandem CLBP**

- Emulation : CLP-610ND(SPL-C), CLP-660, 660N(PostScript 3, PCL6)
- Speed : CLP-610ND(20/20 ppm), CLP-660, 660N(24/24 ppm)
- Resolution : CLP-610ND(1,200 x 600 dpi), CLP-660N, 660ND(1,200 x 600 dpi)
- CPU : CLP-610ND(300 MHz), CLP-660N, 660ND(533 MHz)
- Interface : N/W
- Memory : CLP-610ND / 64 MB, CLP-660N, 660ND/128 MB (Max. 640 MB)
- Duplex (Option)
- 250 CST, 1 Manual, 100 MP
- Toner Cartridge: 2.5K/2K (Std.), 5.5K/5K (High)
- Printer Life: Color 200K / Mono 200K pages

# 5.1 Main


0
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# Main Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

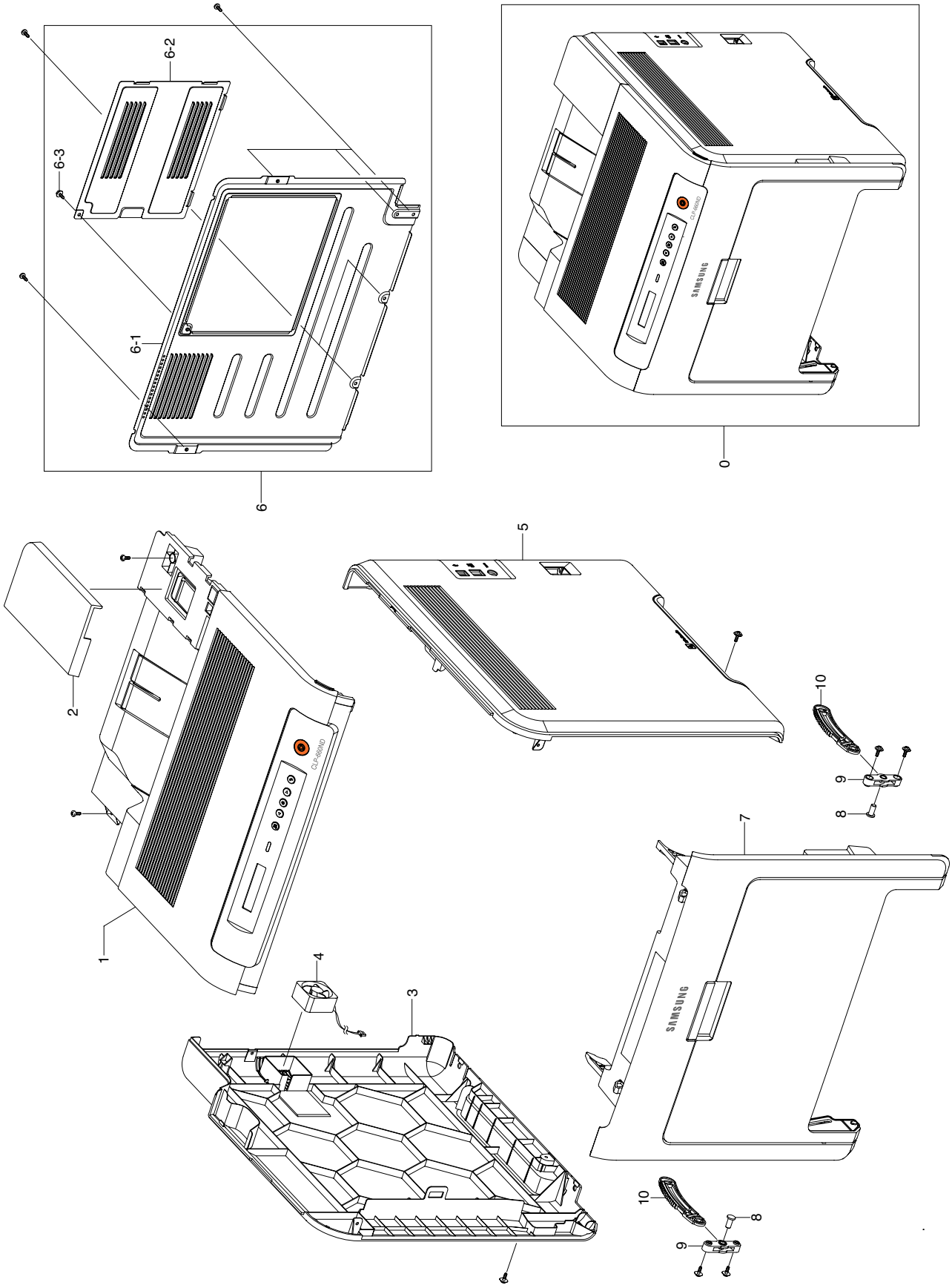
| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.1-0 | CLP-610ND | A4 CLBP,GDI,N/W,DUPLEX | | | |
| 5.1-0 | CLP-610N | A4 CLBP,GDI,N/W | | | |
| 5.1-0 | CLP-660ND | A4 CLBP,PCL,N/W,DUPLEX | | | |
| 5.1-0 | CLP-660N | A4 CLBP,PCL,N/W | | | |
| 5.1-1 | JC96-04490A | ELA UNIT-MAIN_FRAME | 1 | SA | CLP-660 |
| 5.1-1 | JC96-04490B | ELA UNIT-MAIN_FRAME | 1 | SA | CLP-610 |
| 5.1-2 | JC66-01422A | LINK-HINGE | 2 | SA | |
| 5.1-3 | JC44-00136A | HVPS | 1 | SA | |
| 5.1-5 | JC96-04488A | ELA UNIT-DEVE_CRUM | 1 | SA | |
| 5.1-6 | JC61-01012A | GUIDE-_M_BUSH HARNESS S | 1 | SA | |
| 5.1-7 | JC96-04487A | ELA UNIT-DUCT_FUSER | 1 | SA | |
| 5.1-8 | JC31-00073A | FAN | 1 | SA | |
| 5.1-10 | JC96-04864A | ELA UNIT-BRACKET_MAIN | 1 | SA | |
| 5.1-11 | JC44-00091A | SMPS-PSP_TYPE4_V1 | 1 | SA | 110V |
| 5.1-11 | JC44-00092A | SMPS-PSP_TYPE4_V2C | 1 | SA | 220V |
| 5.1-13 | JC44-00143A | FDB-MULTI_TRIAC V2C,CLP-660 | 1 | SA | 220V |
| 5.1-13 | JC44-00142A | FDB-MULTI_TRIAC V1,CLP-660 | 1 | SA | 110V |
| 5.1-13 | JC44-00153A | FDB-SINGLE TRIAC V2C,CLP-610 | 1 | SA | 220V |
| 5.1-13 | JC44-00152A | FDB-SINGLE TRIAC V1,CLP-610 | 1 | SA | 110V |
| 5.1-14 | JC39-00662A | HARNESS-AC_INLET | 1 | SA | |
| 5.1-15 | JC61-01867A | BRACKET-DUMMY_POWER | 1 | SA | |
| 5.1-17 | JC61-01866A | BRACKET-MAIN | 1 | SA | |
| 5.1-18 | JC92-01870A | PBA-MAIN | 1 | SA | CLP-660 |
| - | JC96-04583A | ELA HOU-MAIN_SODIMM | | SNA | CLP-660 |
| - | JC92-01889A | PBA SUB-RAM DIMM,128MB | 1 | SNA | CLP-660 |
| 5.1-18 | JC92-01949A | PBA-MAIN | 1 | SA | CLP-610 |
| - | JC96-04841A | ELA HOU-MAIN_SODIMM | 1 | SA | CLP-610 |
| - | JC92-01923A | PBA-RAM DIMM,DDR2 | 1 | SNA | CLP-610 |
| 5.1-19 | JC66-01425A | DAMPER-HINGE | 2 | SA | |
| 5.1-20 | JC61-01911A | FRAME-DAMPER_R | 1 | SA | |
| 5.1-21 | JC61-01897A | BRACKET-HINGE_R | 1 | SA | |
| 5.1-22 | JC61-01912A | FRAME-DAMPER_L | 1 | SA | |
| 5.1-23 | JC61-01896A | BRACKET-HINGE_L | 1 | SA | |
| 5.1-24 | 6103-000101 | SUPPORTER | 2 | SA | |
| 5.1-25 | JC96-04495A | ELA UNIT-FUSER LV,CLP-660 | 1 | SA | 110V |
| 5.1-25 | JC96-04496A | ELA UNIT-FUSER HV,CLP-660 | 1 | SA | 220V |
| 5.1-25 | JC96-04544A | ELA UNIT-FUSER LV,CLP-610 | 1 | SA | 110V |
| 5.1-25 | JC96-04545A | ELA UNIT-FUSER HV,CLP-610 | 1 | SA | 220V |
| 5.1-26 | JC97-02941A | MEA UNIT-COVER | 1 | SA | CLP-660 |
| 5.1-26 | JC97-02941B | MEA UNIT-COVER | 1 | SA | CLP-660N |
| 5.1-26 | JC97-02941C | MEA UNIT-COVER | 1 | SA | CLP-660ND |
| 5.1-26 | - | MEA UNIT-COVER | 1 | SA | CLP-610 |
| 5.1-26 | - | MEA UNIT-COVER | 1 | SA | CLP-610N |

# Main Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.1-26 | - | MEA UNIT-COVER | 1 | SA | CLP-610ND |
| 5.1-27 | JC96-04391A | ELA UNIT-DEV BK_SET | 1 | SNA | |
| 5.1-28 | JC96-04392A | ELA UNIT-DEV C_SET | 1 | SNA | |
| 5.1-29 | JC96-04393A | ELA UNIT-DEV M_SET | 1 | SNA | |
| 5.1-30 | JC96-04394A | ELA UNIT-DEV Y_SET | 1 | SNA | |
| 5.1-31 | JC96-04406A | ELA UNIT-PTB SET_DUPLEX | 1 | SNA | |
| 5.1-32 | JC96-04498A | ELA HOU-UNIT_CASSETTE | 1 | SNA | |
| 5.1-33 | - | SECOND CASSETTE | 1 | SNA | |
| 5.1-34 | - | USB CABLE | 1 | SA | |
| 5.1-35 | - | POWER CORD | 1 | SA | |

## 5.2 Cover Unit

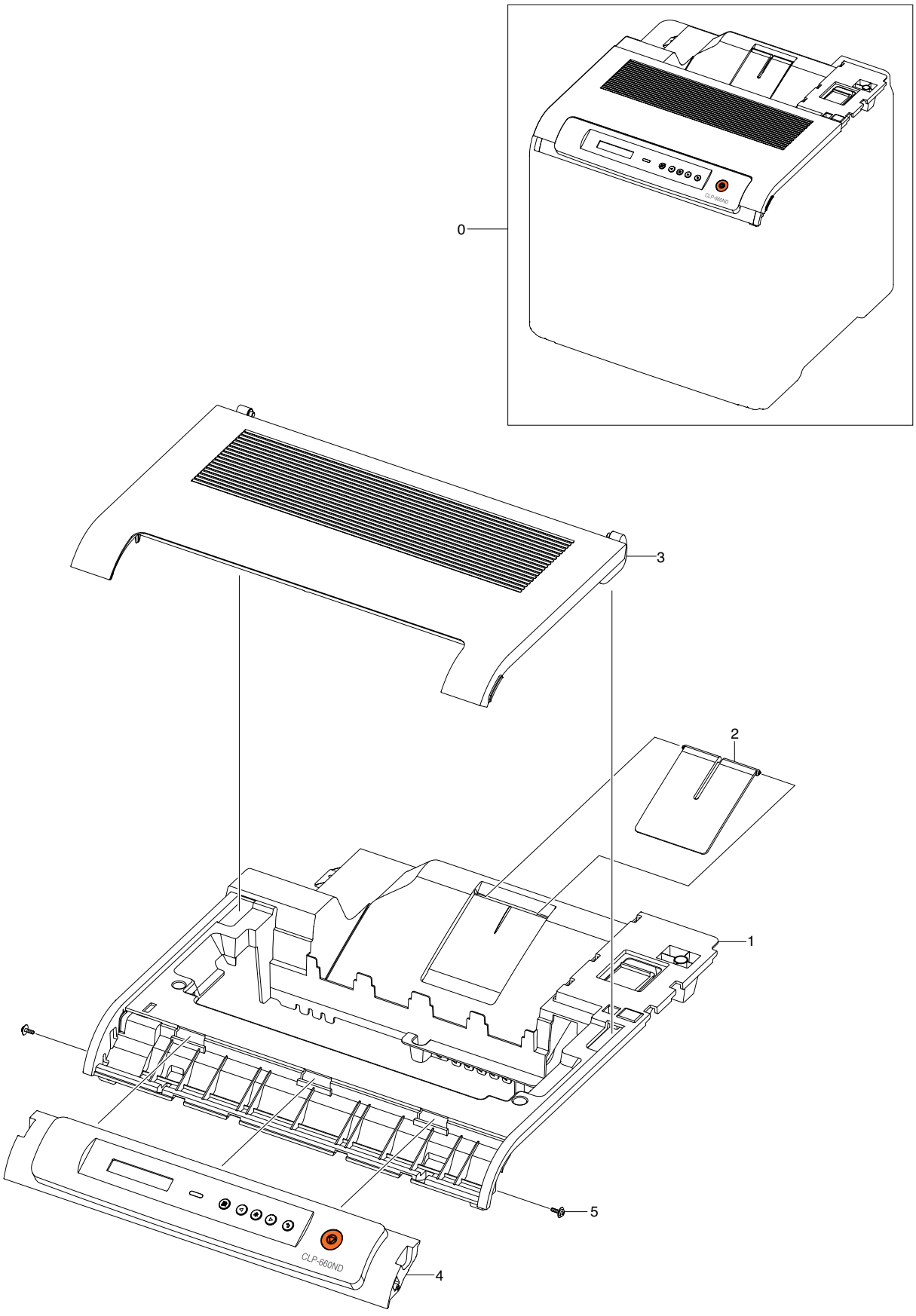


# Cover Unit Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.2-0 | JC97-02941A | MEA UNIT-COVER | 1 | SA | CLP-660 |
| 5.2-0 | JC97-02941B | MEA UNIT-COVER | 1 | SA | CLP-660N |
| 5.2-0 | JC97-02941C | MEA UNIT-COVER | 1 | SA | CLP-660ND |
| 5.2-0 | - | MEA UNIT-COVER | 1 | SA | CLP-610 |
| 5.2-0 | - | MEA UNIT-COVER | 1 | SA | CLP-610N |
| 5.2-0 | - | MEA UNIT-COVER | 1 | SA | CLP-610ND |
| 5.2-1 | JC96-04415A | ELA-COVER TOP | 1 | SA | CLP-660 |
| 5.2-1 | JC96-04415B | ELA-COVER TOP | 1 | SA | CLP-660N |
| 5.2-1 | JC96-04415C | ELA-COVER TOP | 1 | SA | CLP-660ND |
| 5.2-1 | - | ELA-COVER TOP | 1 | SA | CLP-610 |
| 5.2-1 | - | ELA-COVER TOP | 1 | SA | CLP-610N |
| 5.2-1 | - | ELA-COVER TOP | 1 | SA | CLP-610ND |
| 5.2-2 | JC63-01279A | COVER-TOP SUB | 1 | SA | |
| 5.2-3 | JC63-01275A | COVER-LEFT | 1 | SA | |
| 5.2-4 | JC31-00050A | FAN | 1 | SA | |
| 5.2-5 | JC63-01276A | COVER-RIGHT | 1 | SA | |
| 5.2-6 | JC97-03063A | MEA-COVER REAR | 1 | SA | |
| 5.2-6-1 | JC63-01294A | COVER-REAR | 1 | SA | |
| 5.2-6-2 | JC63-01314A | COVER-REAR HDD | 1 | SA | |
| 5.2-6-3 | 6003-000269 | SCREW-TAPTITE | 1 | SA | |
| 5.2-7 | JC97-02846A | MEA-COVER FRONT | 1 | SA | |
| 5.2-8 | JC66-00835A | SHAFT-HINGE LINK | 2 | SA | |
| 5.2-9 | JC61-01846A | HOLDER-LINK FRONT | 2 | SA | |
| 5.2-10 | JC66-01358A | LINK-SUPPORT | 1 | SA | |

## 5.3 Top Cover

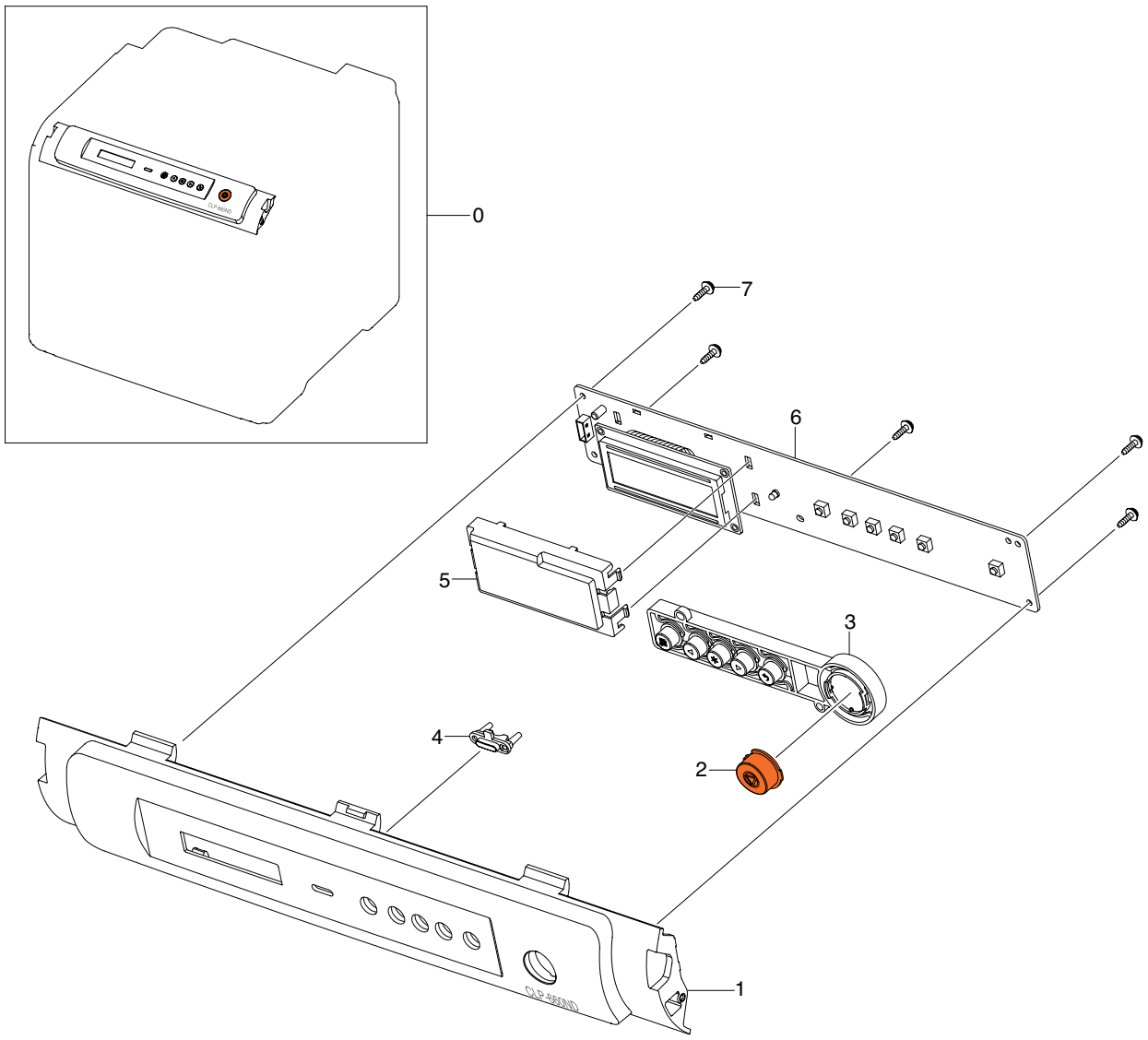


# Top Coverr Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.3-0 | JC96-04415A | ELA-COVER TOP | 1 | SA | CLP-660 |
| 5.3-0 | JC96-04415B | ELA-COVER TOP | 1 | SA | CLP-660N |
| 5.3-0 | JC96-04415C | ELA-COVER TOP | 1 | SA | CLP-660ND |
| 5.3-1 | JC63-01278A | COVER-TOP | 1 | SA | |
| 5.3-2 | JC72-01346D | PMO-STACKER RX | 1 | SA | |
| 5.3-3 | JC97-02847A | MEA COVER-EXIT | 1 | SA | |
| 5.3-4 | JC96-04416A | ELA-OPE | 1 | SA | |
| 5.3-5 | 6003-000196 | SCREW-TAPTITE | 2 | SNA | |

## 5.4 OPE Unit

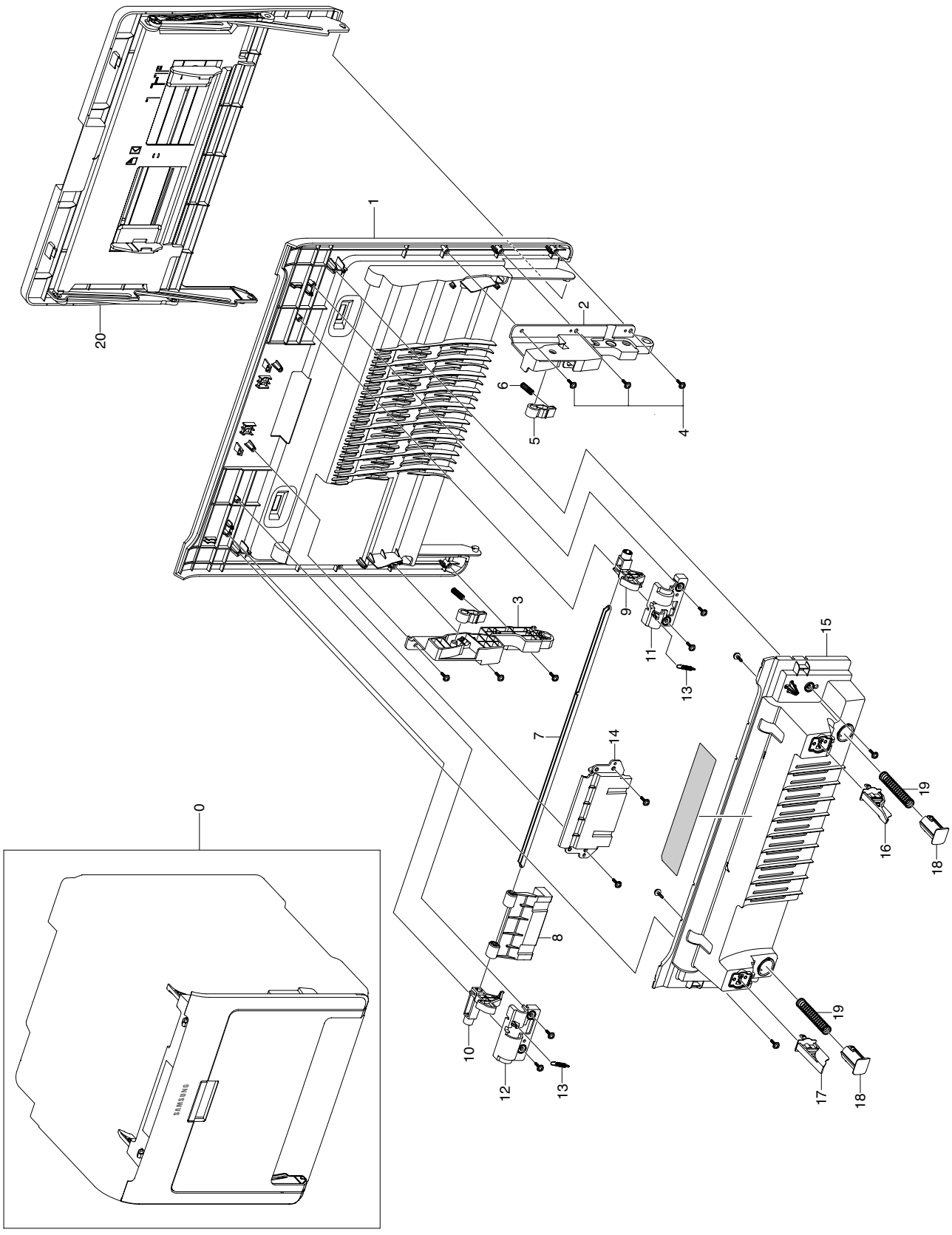


# OPE Unit Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.4-0 | JC96-04416A | ELA-OPE | 1 | SA | CLP-660 |
| 5.4-0 | JC96-04416B | ELA-OPE | 1 | SA | CLP-660N |
| 5.4-0 | JC96-04416C | ELA-OPE | 1 | SA | CLP-660ND |
| 5.4-1 | JC63-01300A | COVER-OPE | 1 | SA | CLP-660 |
| 5.4-1 | JC63-01300B | COVER-OPE | 1 | SA | CLP-660N |
| 5.4-1 | JC63-01300C | COVER-OPE | 1 | SA | CLP-660ND |
| 5.4-2 | JC64-00301A | KEY-STOP | 1 | SA | |
| 5.4-3 | JC64-00300A | KEY-MENU | 1 | SA | |
| 5.4-4 | JC67-00218A | LENS-STATUS | 1 | SA | |
| 5.4-5 | JC61-01847A | HOLDER-LCD | 1 | SA | |
| 5.4-6 | JC92-01872A | PBA SUB-OPE | 1 | SA | |
| 5.4-7 | 6003-000196 | SCREW-TAPTITE | 5 | SNA | |

## 5.5 Front Cover

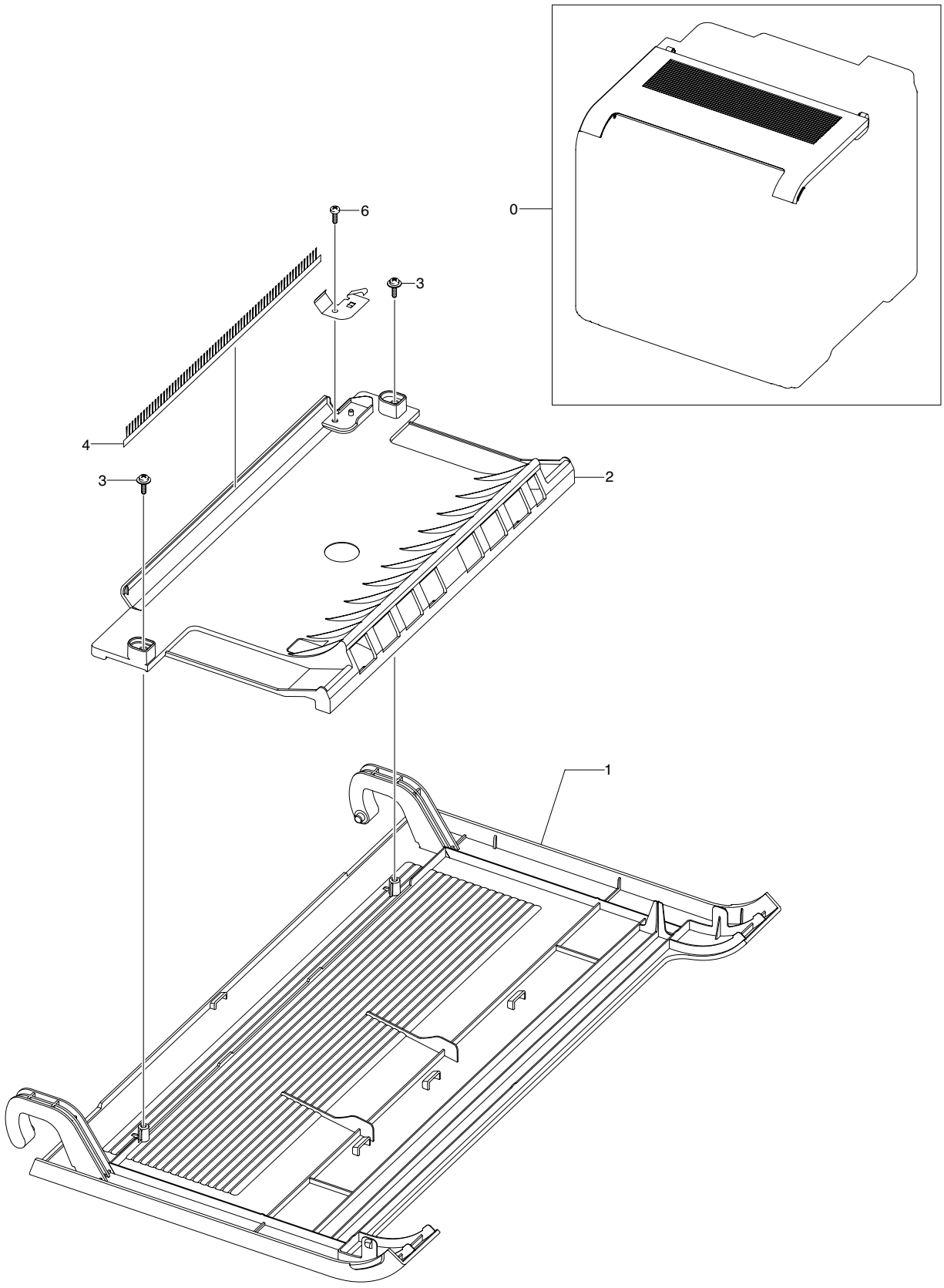


# Front Cover Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.5-0 | JC97-02846A | MEA-COVER FRONT | 1 | SA | |
| 5.5-1 | JC63-01274A | COVER-FRONT | 1 | SA | |
| 5.5-2 | JC61-01849A | SUPPORT-PTB R | 1 | SA | |
| 5.5-3 | JC61-01848A | SUPPORT-PTB L | 1 | SA | |
| 5.5-4 | 6003-000196 | SCREW-TAPTITE | 14 | SNA | |
| 5.5-5 | JC66-01354A | LEVER-PTB | 2 | SA | |
| 5.5-6 | JC61-00038A | SPRING ETC-GUIDE DEVE | 2 | SA | |
| 5.5-7 | JC61-01050A | BRACKET-P-COVER LOCK | 1 | SA | |
| 5.5-8 | JC64-00299A | KNOB-HANDLE | 1 | SA | |
| 5.5-9 | JC64-00306A | LOCKER-FRONT R | 1 | SA | |
| 5.5-10 | JC64-00305A | LOCKER-FRONT L | 1 | SA | |
| 5.5-11 | JC61-01843A | HOLDER-LOCKER FRONT R | 1 | SA | |
| 5.5-12 | JC61-01842A | HOLDER-LOCKER FRONT L | 1 | SA | |
| 5.5-13 | 6107-001138 | SPRING-ES | 2 | SA | |
| 5.5-14 | JC61-01841A | HOLDER-KNOB HANDLE | 1 | SA | |
| 5.5-15 | JC63-01290A | COVER-FRONT PATH | 1 | SA | |
| 5.5-16 | JC66-01353A | LEVER-COUPLING R | 1 | SA | |
| 5.5-17 | JC66-01352A | LEVER-COUPLING L | 1 | SA | |
| 5.5-18 | JC66-01421A | LEVER-PTB TOP | 2 | SA | |
| 5.5-19 | 6107-001345 | SPRING-CS | 2 | SA | |
| 5.5-20 | JC97-02894A | MEA-TRAY MP | 1 | SA | |

## 5.6 Exit Cover

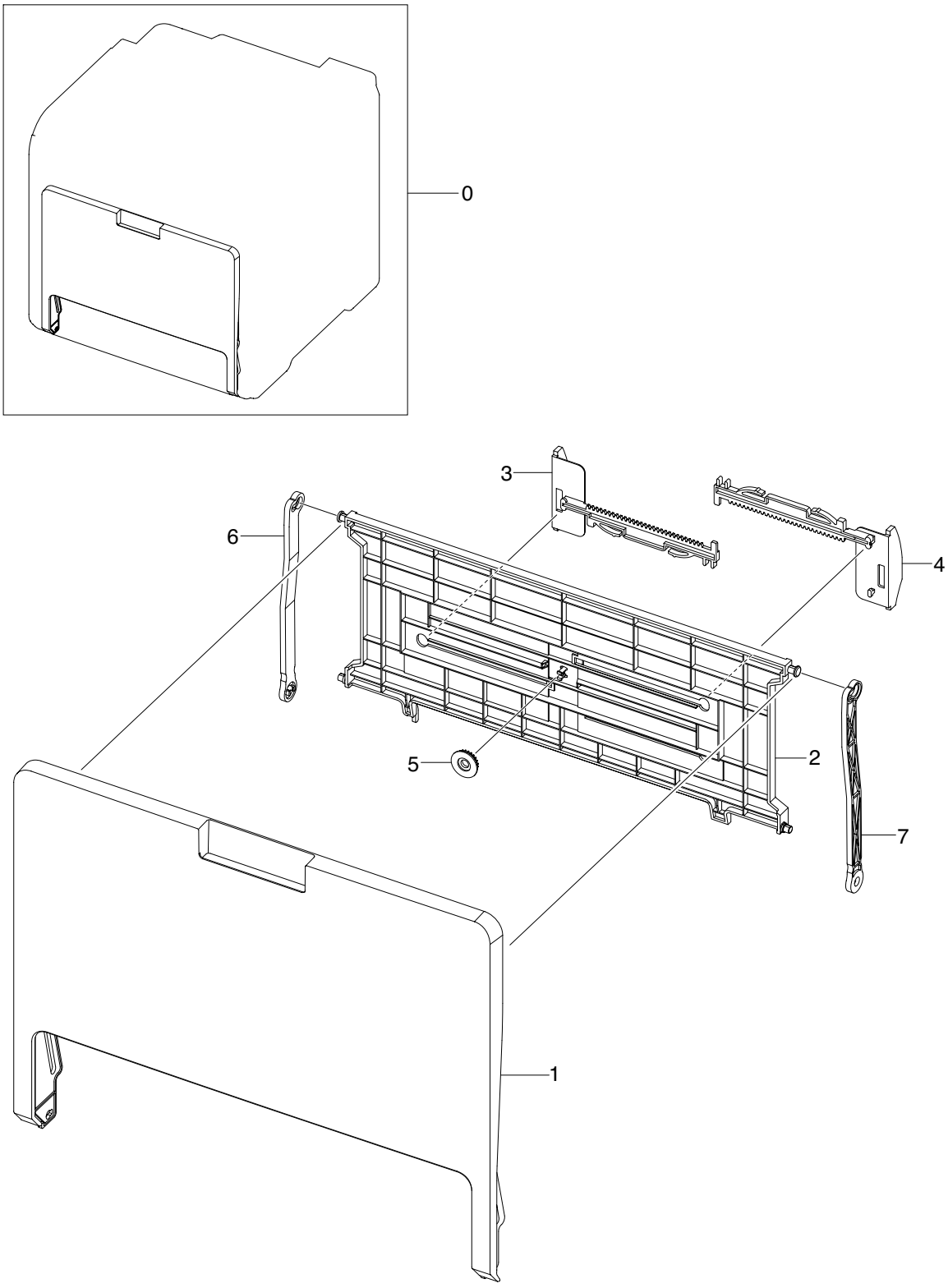


# Exit Cover Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.6-0 | JC97-02847A | MEA-COVER EXIT | 1 | SA | |
| 5.6-1 | JC63-01289A | COVER-EXIT | 1 | SA | |
| 5.6-2 | JC63-01299A | COVER-FUSER EXIT | 1 | SA | |
| 5.6-3 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 5.6-4 | JC75-00095A | MEC-BRUSH ANTISTATIC | 1 | SA | |
| 5.6-5 | JC63-01277A | GROUND-EXIT | 1 | SA | |
| 5.6-6 | 6003-000282 | SCREW-TAPTITE | 1 | SNA | |

## 5.7 MP Tray

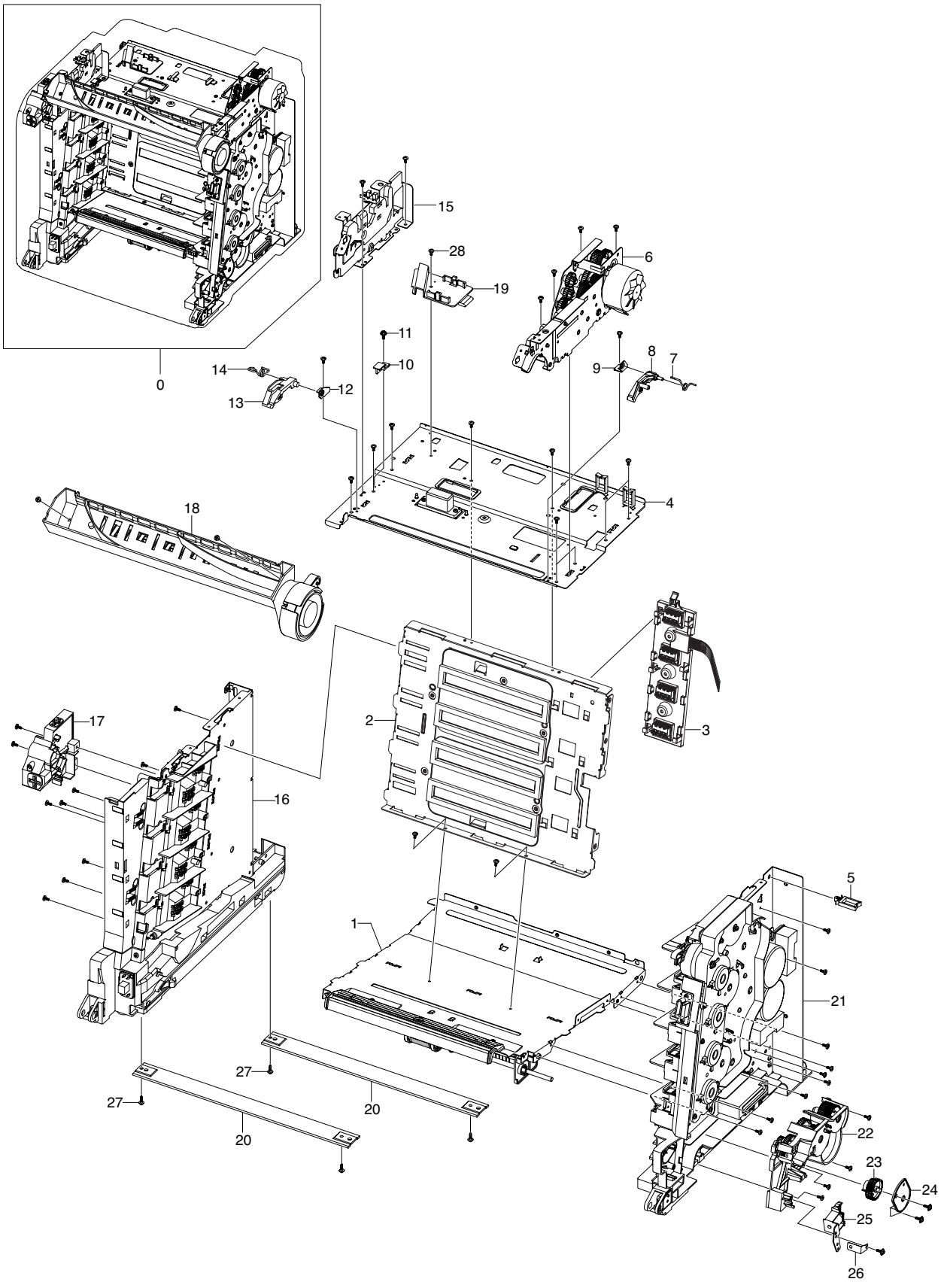


# MP Tray Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.7-0 | JC97-02894A | MEA-TRAY MP | 1 | SA | |
| 5.7-1 | JC63-01287A | COVER-MP_TRAY | 1 | SA | |
| 5.7-2 | JC63-01293A | TRAY-ASF_INPUT | 1 | SA | |
| 5.7-3 | JC66-01349A | LINK-TRAY_MP_L | 1 | SA | |
| 5.7-4 | JC66-01350A | LINK-TRAY_MP_R | 1 | SA | |
| 5.7-5 | JG66-40003A | GEAR-PINION | 1 | SA | |
| 5.7-6 | JC61-01043A | GUIDE-_M_SIDE MP L | 1 | SA | |
| 5.7-7 | JC61-01042A | GUIDE-_M_SIDE MP R | 1 | SA | |

## 5.8 Frame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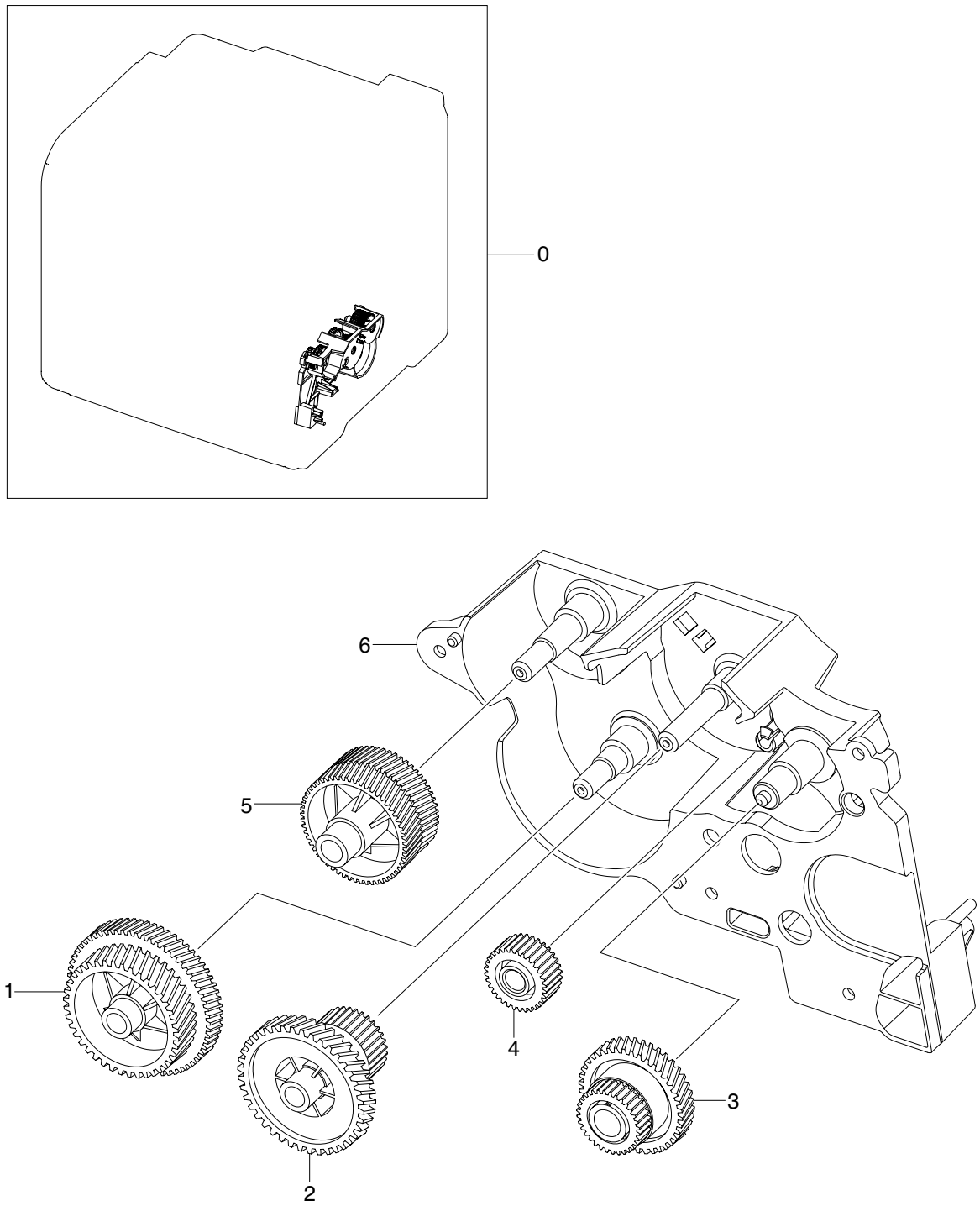
# Frame Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.8-0 | JC96-04490A | ELA UNIT-MAIN_FRAME | 1 | SA | CLP-660 |
| 5.8-0 | JC96-04490B | ELA UNIT-MAIN_FRAME | 1 | SA | CLP-610 |
| 5.8-1 | JC96-04480A | ELA UNIT-FRAME_BOTTOM | 1 | SA | |
| 5.8-2 | JC61-01927A | FRAME-LSU | 1 | SA | |
| 5.8-3 | JC96-04488A | ELA UNIT-DEVE_CRUM | 1 | SA | |
| 5.8-4 | JC96-04479A | ELA UNIT-FRAME_TOP | 1 | SA | |
| 5.8-6 | JC96-04501A | ELA UNIT-FUSER DRIVE | 1 | SA | |
| 5.8-7 | JC61-01879A | SPRING ETC-LOCK_PTB_R | 1 | SA | |
| 5.8-8 | JC64-00303A | LOCKER-PTB_R | 1 | SA | |
| 5.8-9 | JC61-01869A | BRACKET-LOCKER_PTB_R | 1 | SA | |
| 5.8-10 | JC66-01300A | LEVER-FUSER FRAME | 1 | SA | |
| 5.8-11 | 6009-001492 | SCREW-HEX;HWH,+,M3,L8,NI PLT, | 1 | SA | |
| 5.8-12 | JC61-01855A | BRACKET-LOCKER_PTB_L | 1 | SA | |
| 5.8-13 | JC64-00304A | LOCKER-PTB_L | 1 | SA | |
| 5.8-14 | JC61-01899A | SPRING ETC-LOCK_PTB_L | 1 | SA | |
| 5.8-15 | JC96-04481A | ELA UNIT-OPE_LEFT | 1 | SA | |
| 5.8-16 | JC96-04482A | ELA UNIT-FRAME_LEFT | 1 | SA | |
| 5.8-17 | JC97-02883A | MEA UNIT-COVER_OPEN | 1 | SA | |
| 5.8-18 | JC96-04487A | ELA UNIT-DUCT_FUSER | 1 | SA | |
| 5.8-19 | JC61-01890A | GUIDE-HARNESS_CABLE | 1 | SA | |
| 5.8-20 | JC71-00042A | BAR-P_CROSS BOTTOM | 2 | SA | |
| 5.8-21 | JC96-04485A | ELA UNIT-FRAME_RIGHT | 1 | SA | |
| 5.8-22 | JC97-02854A | MEA UNIT-FEED DRIVE | 1 | SA | |
| 5.8-23 | JC97-02895A | MEA-GEAR PICK UP | 1 | SA | |
| 5.8-24 | JC67-00215A | CAP-MAIN PICK-UP GEAR | 1 | SA | |
| 5.8-25 | JC33-00022A | SOLENOID-PICK_UP | 1 | SA | |
| 5.8-26 | JC61-01922A | PLATE-GND-SOLENOID | 1 | SA | |
| 5.8-27 | 6003-000196 | SCREW-TAPTITE;PWH,+,B,M3,L10,NI PLT, | 7 | SNA | |
| 5.8-28 | 6003-000269 | SCREW-TAPTITE;BH,+,-,S,M3,L6,ZPC(WHT), | 49 | SNA | |
| 5.8-29 | JC72-01379A | SPONGE-SEALING_LSU | 4 | SNA | |

## 5.9 Feed Drive

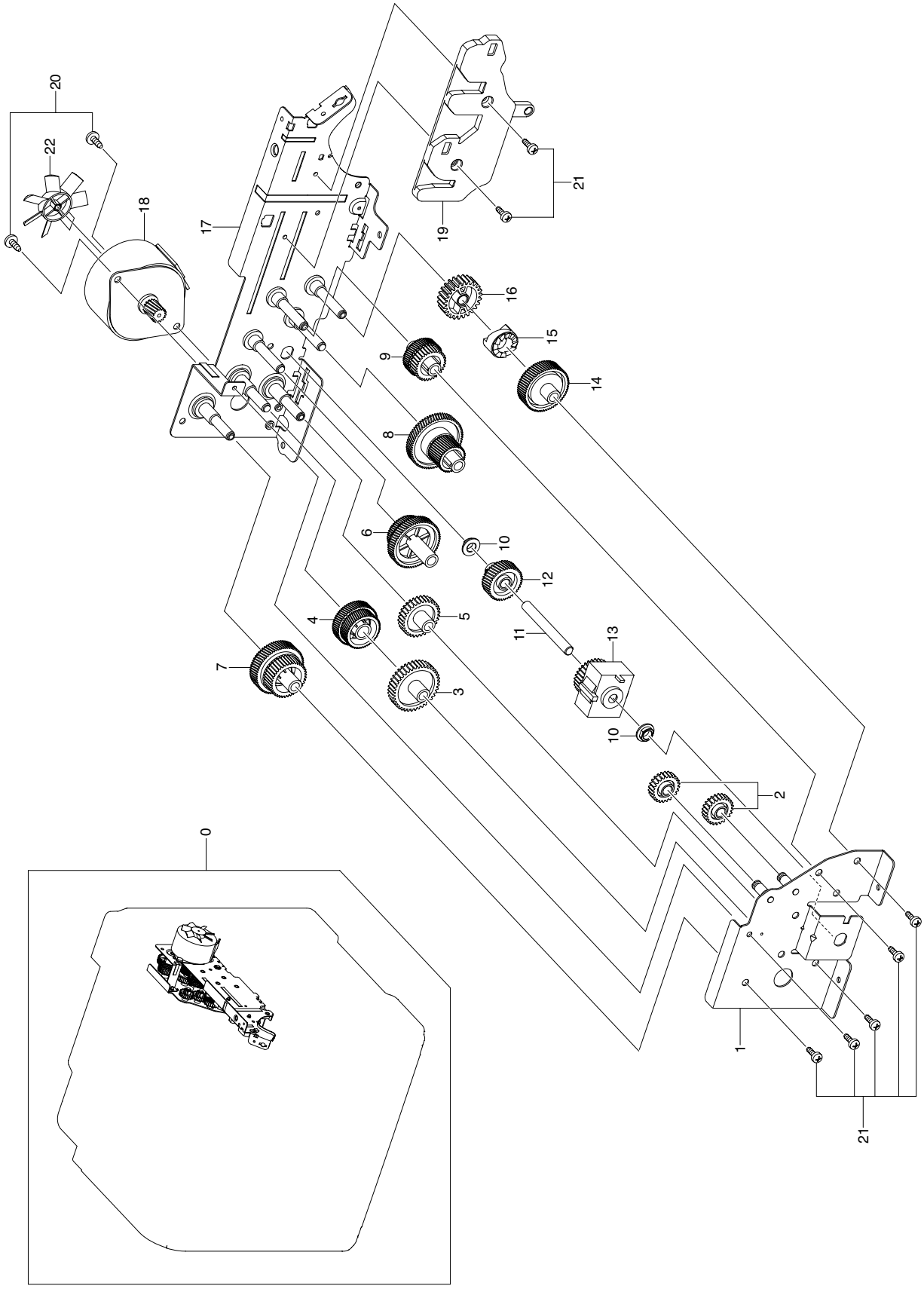


# Feed Drive Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.9-0 | JC97-02854A | MEA UNIT-FEED DRIVE | 1 | SA | |
| 5.9-1 | JC66-01385A | GEAR-RDCN FEED(79/39) | 1 | SA | |
| 5.9-2 | JC66-01383A | GEAR-RDCN FEED(43/23) | 1 | SA | |
| 5.9-3 | JC66-01382A | GEAR-RDCN FEED(35/22) | 1 | SA | |
| 5.9-4 | JC66-01363A | GEAR-DRV MAIN PICK-UP | 1 | SA | |
| 5.9-5 | JC66-01384A | GEAR-RDCN FEED(55/54) | 1 | SA | |
| 5.9-6 | JC61-01835A | BRACKET-FEED DRIVE | 1 | SA | |

## 5.10 Fuser Drive

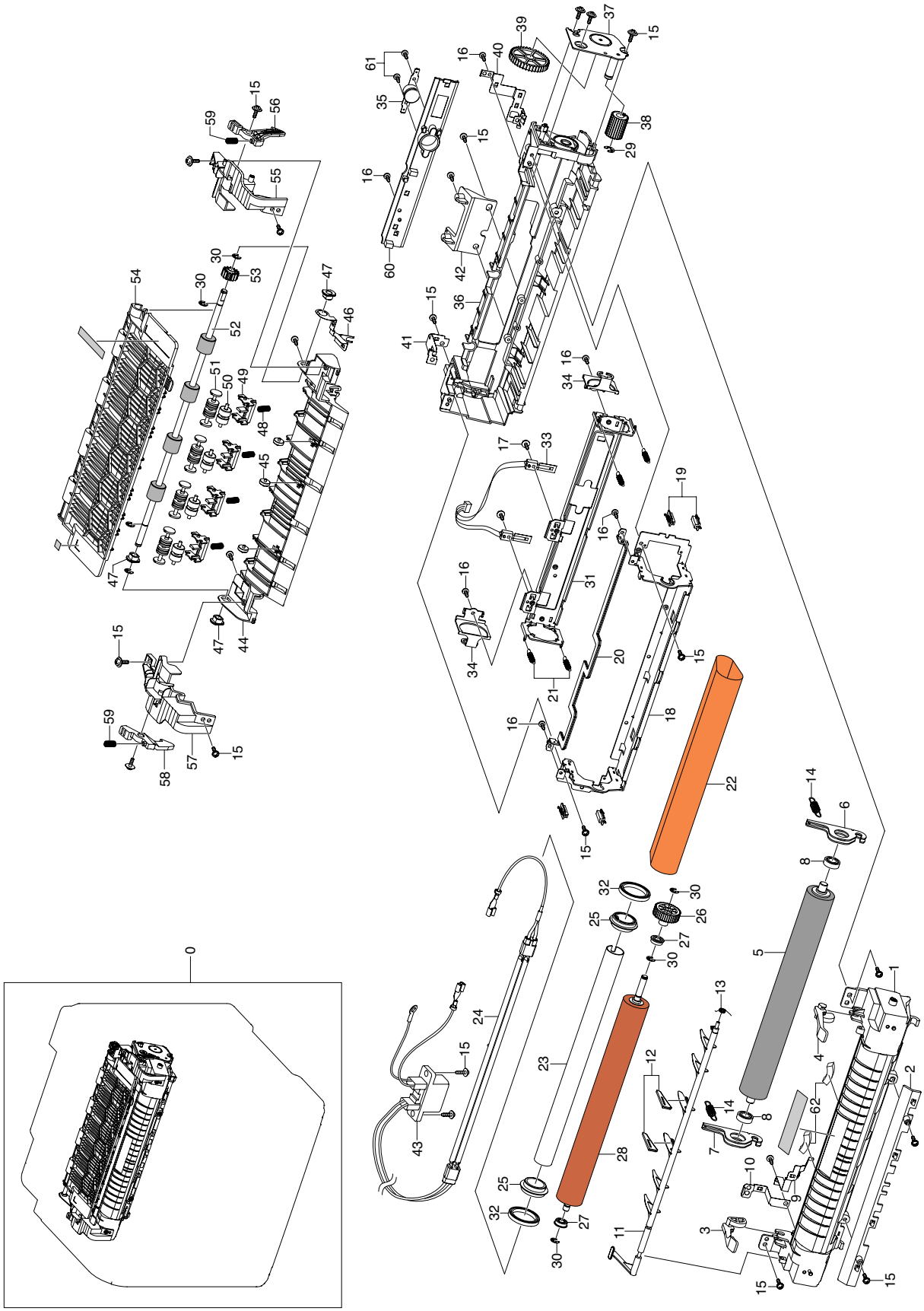


# Fuser Drive Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.10-0 | JC96-04501A | ELA UNIT-FUSER DRIVE | 1 | SA | |
| 5.10-1 | JC61-01859A | BRACKET-FUSER DRIVE L | 1 | SA | |
| 5.10-2 | JC66-01371A | GEAR-IDLE EXIT | 2 | SA | |
| 5.10-3 | JC66-01393A | GEAR-IDLE DEVE | 1 | SA | |
| 5.10-4 | JC66-01392A | GEAR-RDCN FU | 1 | SA | |
| 5.10-5 | JC66-01368A | GEAR-IDLE DEVE | 1 | SA | |
| 5.10-6 | JC66-01386A | GEAR- RDCN FU | 1 | SA | |
| 5.10-7 | JC66-01387A | GEAR-RDCN FU | 1 | SA | |
| 5.10-8 | JC66-01388A | GEAR-RDCN FU | 1 | SA | |
| 5.10-9 | JC66-01381A | GEAR-RDCN EXIT | 1 | SA | |
| 5.10-10 | JC61-00699A | BUSH-D6/L4 | 2 | SA | |
| 5.10-11 | JC66-01341A | SHAFT-CLUTCH FU | 1 | SA | |
| 5.10-12 | JC66-01366A | GEAR-IDLE DEVE | 1 | SA | |
| 5.10-13 | JC47-00006D | CLUTCH-BK DEVE | 1 | SA | |
| 5.10-14 | JC66-01362A | GEAR-DRV FU | 1 | SA | |
| 5.10-15 | JC66-01070A | LATCH-M-HUB CLUTCH | 1 | SA | |
| 5.10-16 | JC66-01155A | GEAR-FUSER RDCN OUT V | 1 | SA | |
| 5.10-17 | JC61-01860A | BRACKET-FUSER DRIVE R | 1 | SA | |
| 5.10-18 | JC31-00076A | MOTOR STEP | 1 | SA | |
| 5.10-19 | JC61-01851A | GUIDE-FUSER R | 1 | SA | |
| 5.10-20 | 6003-000301 | SCREW-TAPTITE | 2 | SNA | |
| 5.10-21 | 6003-000269 | SCREW-TAPTITE | 7 | SNA | |
| 5.10-22 | JC72-00825A | PMO-IMPELLER_DRV | 1 | SA | |

# 5.11 Fuser



# Fuser Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

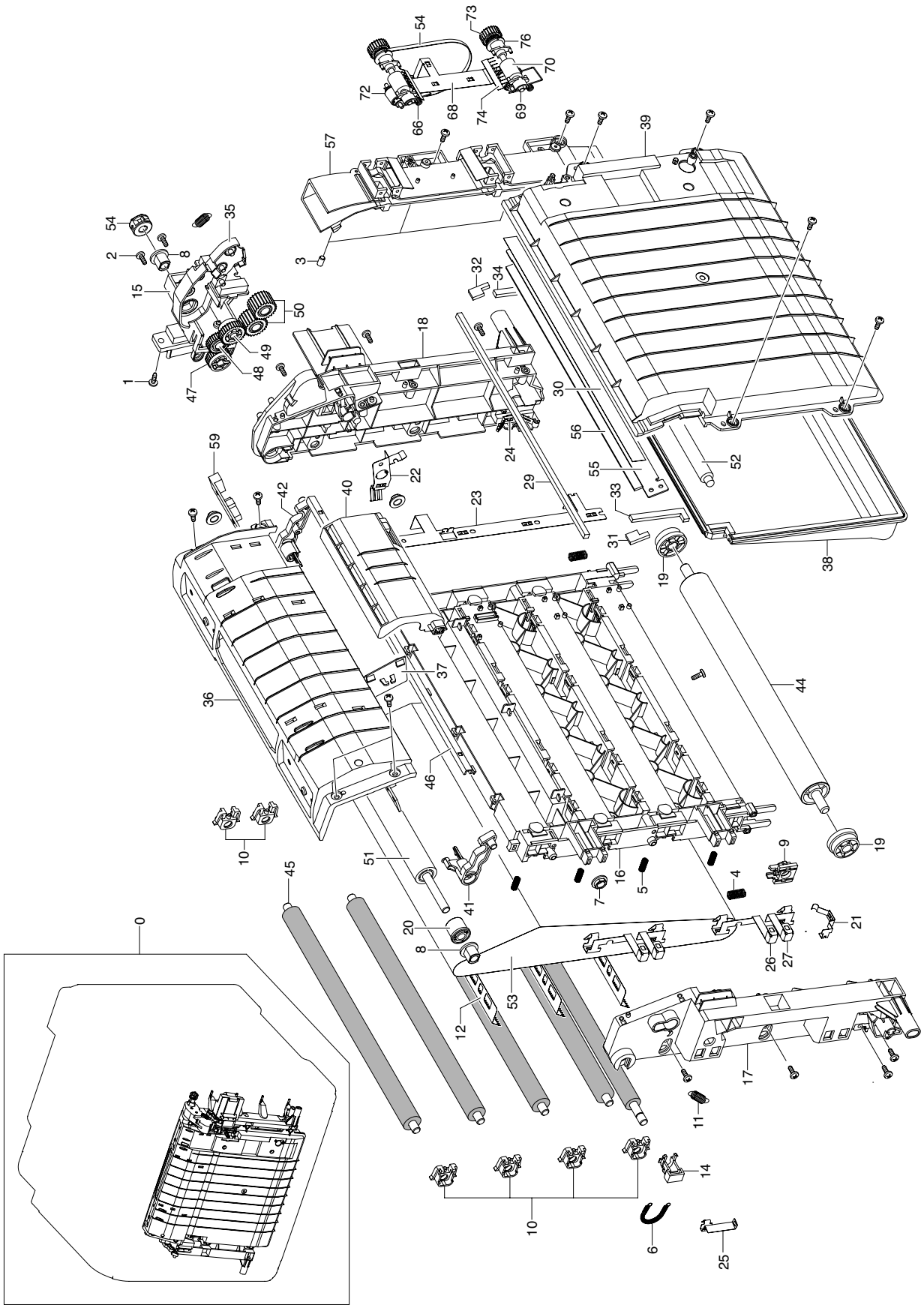
| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.11-0 | JC96-04495A | ELA UNIT-FUSER LV,CLP-660 | 1 | SA | 110V |
| 5.11-0 | JC96-04496A | ELA UNIT-FUSER HV,CLP-660 | 1 | SA | 220V |
| 5.11-0 | JC96-04544A | ELA UNIT-FUSER LV,CLP-610 | 1 | SA | 110V |
| 5.11-0 | JC96-04545A | ELA UNIT-FUSER HV,CLP-610 | 1 | SA | 220V |
| 5.11-1 | JC63-01312A | COVER-FUSER_LOWER | 1 | SA | |
| 5.11-2 | JC61-01933A | GUIDE-INPUT | 1 | SA | |
| 5.11-3 | JC66-01417A | LEVER-JAM_L | 1 | SA | |
| 5.11-4 | JC66-01416A | LEVER-JAM_R | 1 | SA | |
| 5.11-5 | JC66-01412A | ROLLER-PRESSURE | 1 | SA | |
| 5.11-6 | JC61-01917A | BRACKET-PR_R | 1 | SA | |
| 5.11-7 | JC61-01916A | BRACKET-PR_L | 1 | SA | |
| 5.11-8 | 6601-001341 | BEARING-BALL | 2 | SA | |
| 5.11-9 | JC63-01308A | GROUND-PR | 1 | SA | |
| 5.11-10 | JC63-01335A | GROUND-PR_SUB | 1 | SA | |
| 5.11-11 | JC66-01404A | ACTUATOR-FUSER | 1 | SA | |
| 5.11-12 | JC61-01938A | GUIDE-ACTUATOR | 2 | SA | |
| 5.11-13 | JC61-70903A | SPRING ETC-ACTUATOR | 1 | SA | |
| 5.11-14 | 6107-001323 | SPRING-ES | 2 | SA | |
| 5.11-15 | 6003-000196 | SCREW-TAPTITE | 23 | SA | |
| 5.11-16 | 6003-000269 | SCREW-TAPTITE | 6 | SA | |
| 5.11-17 | 6009-001492 | SCREW-HEX | 2 | SA | |
| 5.11-18 | JC61-01915A | BRACKET-FUSER | 1 | SA | |
| 5.11-19 | JC61-01931A | HOLDER-BRACKET | 4 | SA | |
| 5.11-20 | JC61-01921A | SUPPORT-BRACKET | 1 | SA | |
| 5.11-21 | 6107-001324 | SPRING-ES | 4 | SA | |
| 5.11-22 | JC66-01413A | DRUM-FUSER_BELT | 1 | SA | |
| 5.11-23 | JC66-01411A | ROLLER-HEAT | 1 | SA | |
| 5.11-24 | 4713-001221 | LAMP-HALOGEN,CLP-660 | 1 | SA | 220V |
| 5.11-24 | 4713-001222 | LAMP-HALOGEN,CLP-660 | 1 | SA | 110V |
| 5.11-24 | 4713-001229 | LAMP-HALOGEN,CLP-610 | 1 | SA | 220V |
| 5.11-24 | 4713-001228 | LAMP-HALOGEN,CLP-610 | 1 | SA | 110V |
| 5.11-25 | JC61-01928A | BUSH-HR | 2 | SA | |
| 5.11-26 | JC66-01405A | GEAR-FUSER | 1 | SA | |
| 5.11-27 | 6601-001478 | BEARING-BALL | 2 | SA | |
| 5.11-28 | JC66-01410A | ROLLER-FUSER | 1 | SA | |
| 5.11-29 | 6044-000231 | RING-E | 1 | SA | |
| 5.11-30 | 6044-000125 | RING-E | 7 | SA | |
| 5.11-31 | JC61-01918A | BRACKET-HR | 1 | SA | |
| 5.11-32 | 6601-001479 | BEARING-BALL | 2 | SA | |
| 5.11-33 | 1404-001355 | THERMISTOR-NTC ASSY | 1 | SA | |
| 5.11-34 | JC61-01920A | HOLDER-LAMP | 2 | SA | |
| 5.11-35 | 4712-001039 | THERMOSTAT | 1 | SA | |
| 5.11-36 | JC63-01311A | COVER-FUSER_UPPER | 1 | SA | |
| 5.11-37 | JC61-01919A | BRACKET-FU_DRIVE | 1 | SA | |

# Fuser Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.11-38 | JC66-01406A | GEAR-IDLE Z15 | 1 | SA | |
| 5.11-39 | JC66-01407A | GEAR-IDLE Z39 | 1 | SA | |
| 5.11-40 | JC63-01309A | GROUND-UPPER | 1 | SA | |
| 5.11-41 | JC63-01307A | GROUND-LOWER | 1 | SA | |
| 5.11-42 | JC61-01929A | HOLDER-CONNECTOR | 1 | SA | |
| 5.11-43 | JC39-00667A | HARNESS-FUSER DRAW_F,CLP-661 | 1 | SA | 220V |
| 5.11-43 | JC39-00668A | HARNESS-FUSER DRAW_F,CLP-661 | 1 | SA | 110V |
| 5.11-43 | JC39-00768A | HARNESS-FUSER DRAW_F,CLP-611 | 1 | SA | 220V |
| 5.11-43 | - | HARNESS-FUSER DRAW_F,CLP-611 | 1 | SA | 110V |
| 5.11-44 | JC61-01934A | GUIDE-OUTPUT | 1 | SA | |
| 5.11-45 | JC66-00608A | ROLLER-EXIT IDLE | 3 | SA | |
| 5.11-46 | JC63-01310A | GROUND-EXIT | 1 | SA | |
| 5.11-47 | JC61-00423A | BUSH-6_D | 3 | SA | |
| 5.11-48 | JC61-70911A | SPRING ETC-EXIT ROLL FD | 4 | SA | |
| 5.11-49 | JC61-00547A | HOLDER-EXIT(MC) | 4 | SA | |
| 5.11-50 | JC66-01233A | ROLLER-FD R | 4 | SA | |
| 5.11-51 | JC72-41007A | PMO-ROLLER FD F | 4 | SA | |
| 5.11-52 | JC66-01415A | ROLLER-EXIT | 1 | SA | |
| 5.11-53 | JC66-00782A | GEAR-_M_EXIT | 1 | SA | |
| 5.11-54 | JC61-01935A | GUIDE-DUPLEX | 1 | SA | |
| 5.11-55 | JC64-00311A | HANDLE-FUSER_R | 1 | SA | |
| 5.11-56 | JC64-00309A | LOCKER-FUSER_R | 1 | SA | |
| 5.11-57 | JC64-00312A | HANDLE-FUSER_L | 1 | SA | |
| 5.11-58 | JC64-00310A | LOCKER-FUSER_L | 1 | SA | |
| 5.11-59 | JC61-00550A | SPRING ETC-DEVE REAR | 2 | SA | |
| 5.11-60 | JC61-01930A | HOLDER-HARNESS | 1 | SA | |
| 5.11-61 | 6003-000282 | SCREW-TAPTITE | 2 | SA | |
| 5.11-62 | JC63-00903 | FELT-CLEAN TONER | 2 | SA | |

# 5.12 PTB Unit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# PTB Unit Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

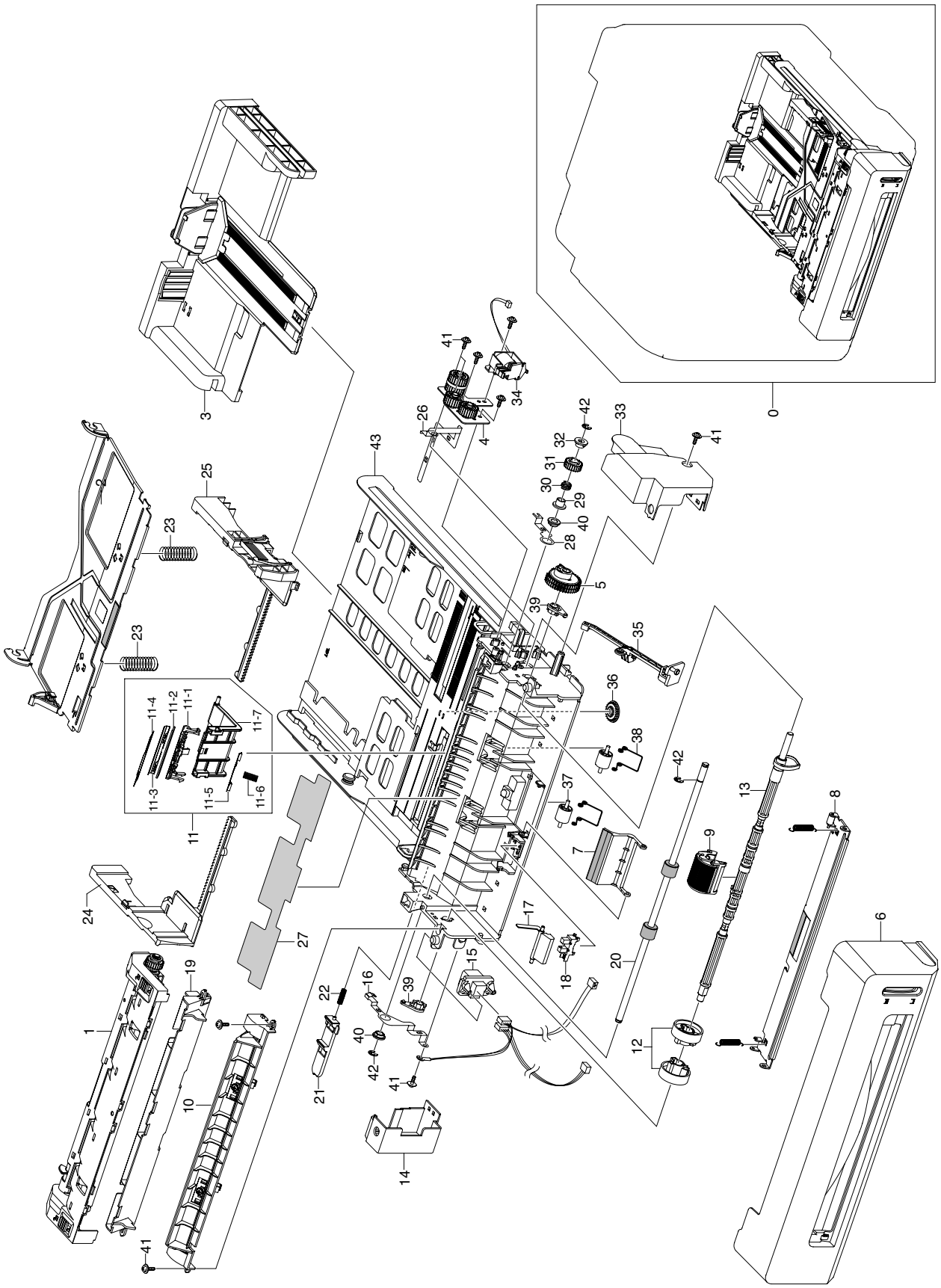
| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.12-0 | JC96-04406A | ELA UNIT-PTB SET_DUPLEX | 1 | SNA | |
| 5.12-1 | 6003-000196 | SCREW-TAPTITE | 7 | SNA | |
| 5.12-2 | 6003-000282 | SCREW-TAPTITE | 19 | SNA | |
| 5.12-3 | 6043-001097 | PIN-SPRING | 2 | SNA | |
| 5.12-4 | 6107-001364 | SPRING-CS | 2 | SNA | |
| 5.12-5 | 6107-001365 | SPRING-CS | 8 | SNA | |
| 5.12-6 | 6107-001316 | SPRING-ES | 2 | SNA | |
| 5.12-7 | JC61-00699A | BUSH-D6/L4 | 3 | SNA | |
| 5.12-8 | JC61-00884A | BUSH-6_D(L) | 2 | SNA | |
| 5.12-9 | JC61-01092A | HOLDER-M-TENSION | 2 | SNA | |
| 5.12-10 | JC61-01093A | HOLDER-M-TRANSFER | 8 | SNA | |
| 5.12-11 | JC61-01678A | SPRING ETC-DEV_FRONT | 2 | SNA | |
| 5.12-12 | JC61-01754A | PLATE-SAW FUSER | 3 | SNA | |
| 5.12-13 | JC61-01820A | HOLDER-PAPER C,L | 1 | SNA | |
| 5.12-14 | JC61-01821A | HOLDER-PAPER C,R | 1 | SNA | |
| 5.12-15 | JC61-01822A | HOLDER-DRAW | 1 | SNA | |
| 5.12-16 | JC61-01823A | FRAME-PTB | 1 | SNA | |
| 5.12-17 | JC61-01824A | FRAME-DUMMY,L | 1 | SNA | |
| 5.12-18 | JC61-01825A | FRAME-DUMMY,R | 1 | SNA | |
| 5.12-19 | JC61-01826A | GUIDE-BELT | 1 | SNA | |
| 5.12-20 | JC61-01827A | GUIDE-DRIVE | 2 | SNA | |
| 5.12-21 | JC61-01828A | PLATE-DUMMY TENSION | 1 | SNA | |
| 5.12-22 | JC61-01829A | PLATE-GROUND BACKUP | 1 | SNA | |
| 5.12-23 | JC61-01830A | PLATE-GROUND PTB | 1 | SNA | |
| 5.12-24 | JC61-01831A | PLATE-GROUND TENSION | 1 | SNA | |
| 5.12-25 | JC61-01832A | PLATE-HV PCR | 1 | SNA | |
| 5.12-26 | JC61-01833A | PLATE-HV TR_M | 2 | SNA | |
| 5.12-27 | JC61-01834A | PLATE-HV TR_Y | 2 | SNA | |
| 5.12-28 | JC61-02179A | PLATE-GND RESISTANCE | 1 | SNA | |
| 5.12-29 | JC62-00163A | SEAL-WASTE BOTTOM | 1 | SNA | |
| 5.12-30 | JC62-00166A | SEAL-WASTE FILM | 1 | SNA | |
| 5.12-31 | JC62-00355A | SEAL-BLADE PTB,L | 1 | SNA | |
| 5.12-32 | JC62-00356A | SEAL-BLADE PTB,R | 1 | SNA | |
| 5.12-33 | JC62-00357A | SEAL-BRKT PTB,L | 1 | SNA | |
| 5.12-34 | JC62-00358A | SEAL-BRKT PTB,R | 1 | SNA | |
| 5.12-35 | JC63-01267A | COVER-DUPLEX GEAR | 1 | SNA | |
| 5.12-36 | JC63-01268A | COVER-UPPER PTB | 1 | SNA | |
| 5.12-37 | JC63-01269A | COVER-HANDLE INNER | 1 | SNA | |
| 5.12-38 | JC63-01270A | COVER-WASTE TONER,L | 1 | SNA | |
| 5.12-39 | JC63-01271A | COVER-WASTE TONER,U | 1 | SNA | |
| 5.12-40 | JC64-00296A | HANDLE-LOCKER PTB | 1 | SNA | |
| 5.12-41 | JC64-00297A | LOCKER-PTB,L | 1 | SNA | |
| 5.12-42 | JC64-00298A | LOCKER-PTB,R | 1 | SNA | |
| 5.12-43 | JC66-00918A | ROLLER-PAPER CHARGE | 1 | SNA | |

# PTB Unit Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.12-44 | JC66-00920A | ROLLER-TENSION,PTB | 1 | SNA | |
| 5.12-45 | JC66-00922B | ROLLER-TRANSFER | 4 | SNA | |
| 5.12-46 | JC66-01089A | SHAFT-P-LOCKBAR REAR | 1 | SNA | |
| 5.12-47 | JC66-01322A | GEAR-DUP DRIVE Z34 | 1 | SNA | |
| 5.12-48 | JC66-01323A | GEAR-DUP IDLE Z33 | 1 | SNA | |
| 5.12-49 | JC66-01324A | GEAR-DUP RDCN Z2923 | 1 | SNA | |
| 5.12-50 | JC66-01325A | GEAR-DUP IDLE Z21 | 2 | SNA | |
| 5.12-51 | JC66-01331A | ROLLER-DRIVE PTB | 1 | SNA | |
| 5.12-52 | JC66-01332A | ROLLER-BACKUP CLEAN | 1 | SNA | |
| 5.12-53 | JC66-01333A | DRUM-PTB BELT | 1 | SNA | |
| 5.12-54 | JC67-00213A | COUPLER-PTB | 1 | SNA | |
| 5.12-55 | JC97-02247B | MEA UNIT-CLEANING PTB | 1 | SNA | |
| 5.12-56 | JC61-01109A | BRACKET-P-CLN,PTB | 1 | SNA | |
| 5.12-57 | JC61-01280B | BLADE-CLEANING PTB | 1 | SNA | |
| 5.12-58 | JC92-01868A | PBA SUB-PTB CRUM | 1 | SNA | |
| 5.12-59 | JC32-00006A | SENSOR-CTD | 2 | SNA | |
| 5.12-60 | JC39-00664A | HARNESS-PTB DRAW_P | 1 | SNA | |
| 5.12-61 | JC39-00653A | HARNESS-ACR_SENSOR | 1 | SNA | |
| 5.12-62 | 2009-001197 | R-METAL GLAZE | 1 | SNA | |
| 5.12-63 | JC97-02898A | MEA UNIT-DUPLEX | 1 | SNA | |
| 5.12-64 | 6602-001084 | BELT-TIMING GEAR | 1 | SNA | |
| 5.12-65 | JC61-00665A | BUSH-M-FEED, DUP | 4 | SNA | |
| 5.12-66 | JC61-01277A | SPRING ETC-DUP | 2 | SNA | |
| 5.12-67 | JC61-01839A | GUIDE-ALIGN-DUP | 1 | SNA | |
| 5.12-68 | JC63-01297A | GROUND-ALIGN_DUP | 1 | SNA | |
| 5.12-69 | JC66-00444A | SHAFT-IDLE ROLL, DUP | 2 | SNA | |
| 5.12-70 | JC66-00896A | ROLLER-M-IDLE_ DUP | 2 | SNA | |
| 5.12-71 | JC66-00900A | PULLEY-M-18-DUMMY_DUP | 2 | SNA | |
| 5.12-72 | JC66-00901A | ROLLER-FEED_DUP | 2 | SNA | |
| 5.12-73 | JC66-01400A | GEAR | 2 | SNA | |
| 5.12-74 | JC67-00205A | BRUSH-DUPLEX | 2 | SNA | |
| 5.12-75 | JC70-00457A | ICT-STUD PAPER GUIDE, DP | 3 | SNA | |
| 5.12-76 | JK72-00058A | PCT-SILP WASHER | 4 | SNA | |

## 5.13 Cassette



# Cassette Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

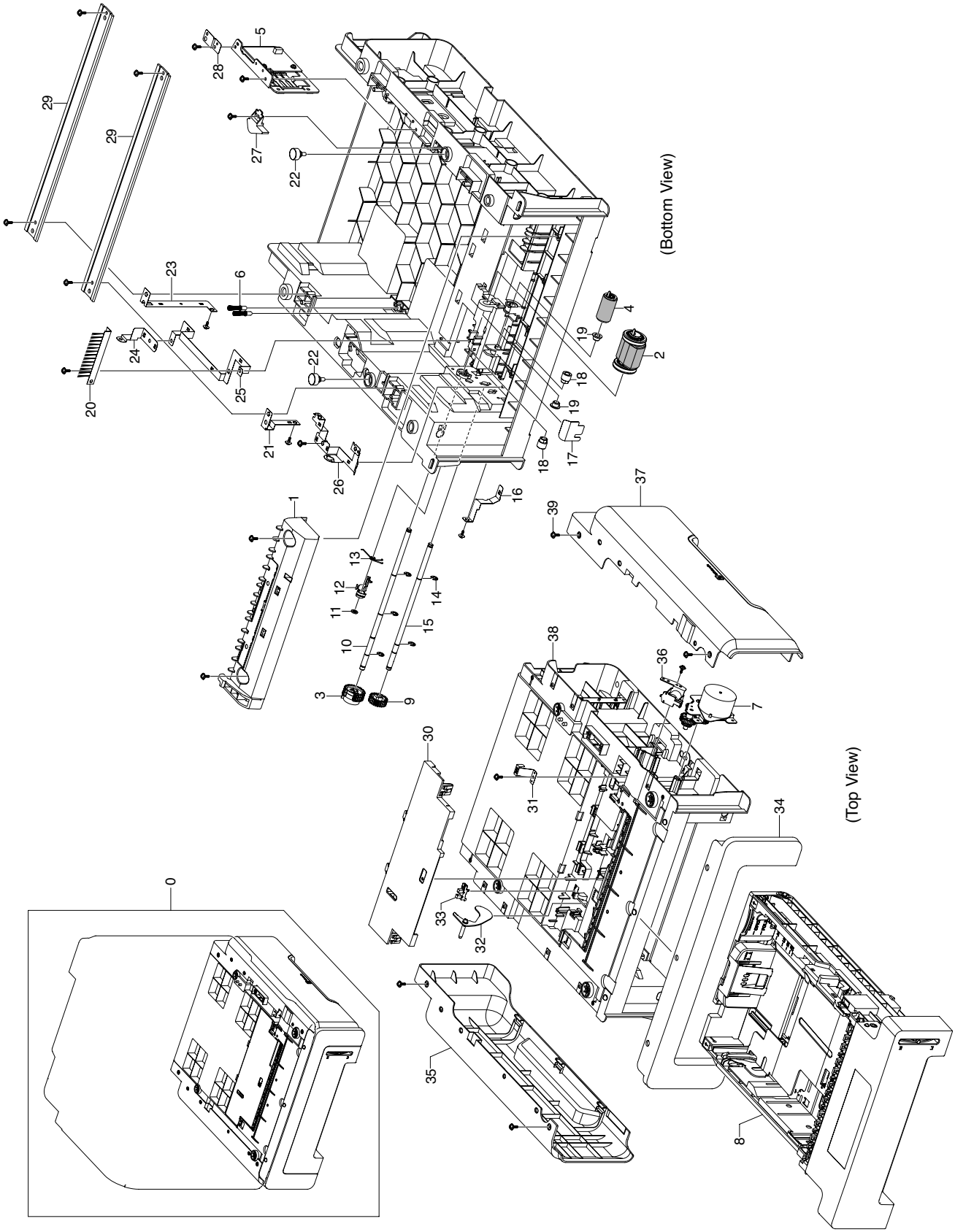
| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.13-0 | JC96-04498A | ELA HOU-UNIT_CASSETTE | 1 | SNA | |
| 5.13-1 | JC97-02897A | MEA UNIT-REGISTRATION | 1 | SA | |
| 5.13-2 | JC97-02888A | MEA-KNOCK_UP_PLATE | 1 | SNA | |
| 5.13-3 | JC97-02887A | MEA-GUIDE_EXETENSION | 1 | SNA | |
| 5.13-4 | JC97-02889A | MEA UNIT-GEAR_BASE | 1 | SNA | |
| 5.13-5 | JC97-02893A | MEA-GEAR PICKUP_MP | 1 | SNA | |
| 5.13-6 | JC97-02885A | MEA-COVER_CASSETTE | 1 | SNA | |
| 5.13-7 | JC97-02892A | MEA-HOLDER PAD_MP | 1 | SNA | |
| 5.13-8 | JC97-02891A | MEA-KNOCK_UP PLATE_MP | 1 | SNA | |
| 5.13-9 | JC96-02686B | ELA UNIT-ROLLER P/UP MP | 1 | SA | |
| 5.13-10 | JC97-02890A | MEA-GUIDE PAPER DUP | 1 | SNA | |
| 5.13-11 | JC97-03077A | MEA-HOLDER_PAD_SHEET | 1 | SA | |
| 5.13-11-1 | JC61-02159A | HOLDER-PAD | 1 | SNA | |
| 5.13-11-2 | JC73-00140A | RPR-FRICTION PAD | 1 | SNA | |
| 5.13-11-3 | JC61-02237A | PLATE-PAD | 1 | SNA | |
| 5.13-11-4 | JC63-01669A | SHEET PAD | 1 | SNA | |
| 5.13-11-5 | JC63-01205A | GROUND-PAD | 1 | SNA | |
| 5.13-11-6 | JC61-70911A | SPRING ETC-EXIT ROLL FD | 1 | SNA | |
| 5.13-11-7 | JC61-01978A | HOUSING-HOLDER PAD | 1 | SNA | |
| 5.13-12 | JC72-01003A | PMO-IDLE PICK UP MP | 2 | SA | |
| 5.13-13 | JC66-01348A | SHAFT-MP_PICK_UP | 1 | SNA | |
| 5.13-14 | JC63-01286A | COVER-DRAW_CONNECTOR | 1 | SNA | |
| 5.13-15 | JC39-00659A | HARNESS-MP DRAWER_MP | 1 | SNA | |
| 5.13-16 | JC63-01282A | GROUND-REGI_BRKT | 1 | SNA | |
| 5.13-17 | JC66-01403A | ACTUATOR-FEED_EMPTY | 1 | SNA | |
| 5.13-18 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 5.13-19 | JC61-01865A | GUIDE-PAPER_MPF | 1 | SNA | |
| 5.13-20 | JC66-01347A | ROLLER-FEED | 1 | SNA | |
| 5.13-21 | JC72-00972A | PMO-PLATE_LOCKER | 1 | SA | |
| 5.13-22 | JG61-70531A | SPRING ETC-LOCKER,PLATE | 1 | SA | |
| 5.13-23 | 6107-001166 | SPRING-CS | 2 | SA | |
| 5.13-24 | JC70-00300A | ADJUST-M-CASSETTE_L | 1 | SNA | |
| 5.13-25 | JC70-00301A | ADJUST-M-CASSETTE_R | 1 | SA | |
| 5.13-26 | JC61-01940A | PLATE-GND_KNOCKUP | 1 | SNA | |
| 5.13-27 | JC63-01291A | SHEET-MPF | 1 | SNA | |
| 5.13-28 | JC61-01923A | PLATE-GND-BRKT-GEAR | 1 | SNA | |
| 5.13-29 | JC61-01128A | HOLDER-_M_GEAR REGI | 1 | SA | |
| 5.13-30 | 6107-001249 | SPRING-CS | 1 | SNA | |
| 5.13-31 | JC66-00774A | GEAR-M-REGI | 1 | SA | |
| 5.13-32 | JC61-01127A | HOLDER-_M_CLUTCH GEAR | 1 | SA | |
| 5.13-33 | JC63-01285A | COVER-GEAR_BOX | 1 | SNA | |
| 5.13-34 | JC33-00022A | SOLENOID-PICK_UP | 1 | SNA | |
| 5.13-35 | JC66-01355A | LEVER-LINK_INDICATOR | 1 | SNA | |
| 5.13-36 | JG66-40003A | GEAR-PINION | 1 | SA | |

# Cassette Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.13-37 | JC66-00764A | ROLLER-IDLE FEED | 2 | SA | |
| 5.13-38 | JC61-01274A | SPRING ETC-ROLLER | 2 | SA | |
| 5.13-39 | JC72-41191B | PMO-BEARING SHAFT | 2 | SA | |
| 5.13-40 | JC61-00699A | BUSH-D6/L4 | 2 | SA | |
| 5.13-41 | 6003-000196 | SCREW-TAPTITE | 10 | SNA | |
| 5.13-42 | 6044-000125 | RING-E | 3 | SA | |
| 5.13-43 | JC61-01856A | FRAME-CASSETTE | 1 | SA | |

# 5.14 SCF Unit


(Bottom View)
(Top View)
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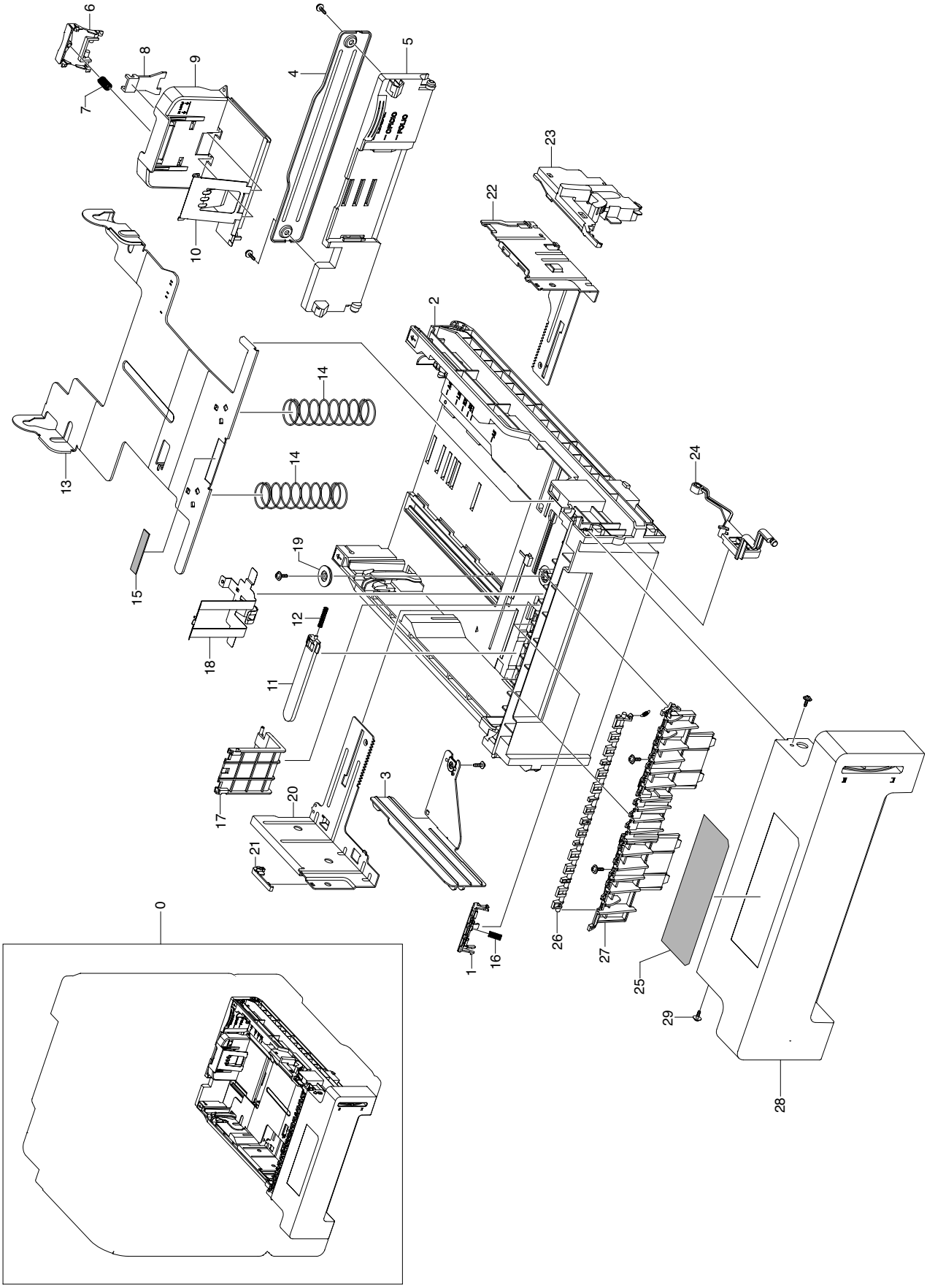
# SCF Unit Parts List

SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.14-0 | JC96-04502A | ELA HOU-UNIT_SCF | | | |
| 5.14-1 | JC96-04019A | ELA UNIT-IDLE_SCF | 1 | SA | |
| 5.14-2 | JC97-02233A | MEA UNIT-P/UP_HOUSING | 1 | SA | |
| 5.14-3 | JC97-02691A | MEA UNIT-GEAR_PICK_UP | 1 | SA | |
| 5.14-4 | JC81-03458A | AS-UNIT_FEED1 | 1 | SA | |
| 5.14-5 | JC96-02127A | ELA HOU-CST SENSOR HAWK16 | 1 | SA | |
| 5.14-6 | JC97-01401A | MEA UNIT-TERMINAL:TR | 4 | SA | |
| 5.14-7 | JC96-03956A | ELA UNIT-MOTOR SCF | 1 | SA | |
| 5.14-8 | JC96-04503A | ELA HOU-UNIT_CASSETTE | 1 | SNA | |
| 5.14-9 | JC66-01262A | GEAR-FEED | 1 | SNA | |
| 5.14-10 | JC66-01277A | SHAFT-PICK UP_SCF | 1 | SA | |
| 5.14-11 | 6044-000001 | RING-CS | 1 | SNA | |
| 5.14-12 | JC61-01743A | HOLDER-PICK_UP_SCF | 1 | SNA | |
| 5.14-13 | 6107-001170 | SPRING-TS | 1 | SA | |
| 5.14-14 | 6044-000125 | RING-E | 5 | SA | |
| 5.14-15 | JC66-01276A | SHAFT-FEED_SCF | 1 | SA | |
| 5.14-16 | JC63-01137A | GROUND-P_MOTOR_SCF | 1 | SNA | |
| 5.14-17 | JC63-01163A | SHEET-GUIDE_PATH | 1 | SA | |
| 5.14-18 | JC61-01579A | HOLDER-P-REGI | 2 | SNA | |
| 5.14-19 | JC66-10202A | BEARING-PICK UP | 2 | SA | |
| 5.14-20 | JC67-00204A | BRUSH-PICK | 1 | SA | |
| 5.14-21 | JC63-01136A | GROUND-P_FRONT_BOTTOM | 1 | SNA | |
| 5.14-22 | JC61-40001A | FOOT-ML80 | 2 | SA | |
| 5.14-23 | JC63-01140A | GROUND-P_REAR_BOTTOM | 1 | SNA | |
| 5.14-24 | JC61-01904A | PLATE-GND_REAR_TOP | 1 | SNA | |
| 5.14-25 | JC61-01903A | PLATE-GND_FRAME_SCF | 1 | SNA | |
| 5.14-26 | JC63-01141A | GROUND-P_SHAFT | 1 | SNA | |
| 5.14-27 | JC72-01355A | PMO-REMOVE_LOCK_CST | 1 | SA | |
| 5.14-28 | JC63-00675A | GROUND-P-PAPER_SIZE | 1 | SNA | |
| 5.14-29 | JC71-00042A | BAR-P_CROSS BOTTOM | 2 | SA | |
| 5.14-30 | JC63-00686A | COVER-M-DUMMY_SCF | 1 | SNA | |
| 5.14-31 | JC70-11028A | IPR-GROUND TOP | 1 | SNA | |
| 5.14-32 | JC72-00992A | PMO-ACTUATOR EMPTY,SCF | 1 | SA | |
| 5.14-33 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 5.14-34 | JC63-01305A | COVER-FRONT_SCF | 1 | SNA | |
| 5.14-35 | JC63-01303A | COVER-LEFT_SCF | 1 | SNA | |
| 5.14-36 | JC33-00012A | SOLENOID-MAIN | 1 | SA | |
| 5.14-37 | JC63-01304A | COVER-RIGHT_SCF | 1 | SNA | |
| 5.14-38 | JC61-01902A | FRAME-SCF | 1 | SNA | |
| 5.14-39 | 6003-000196 | SCREW-TAPTITE | 24 | SNA | |

## 5.15 SCF Cassette



# SCF Cassette Parts List

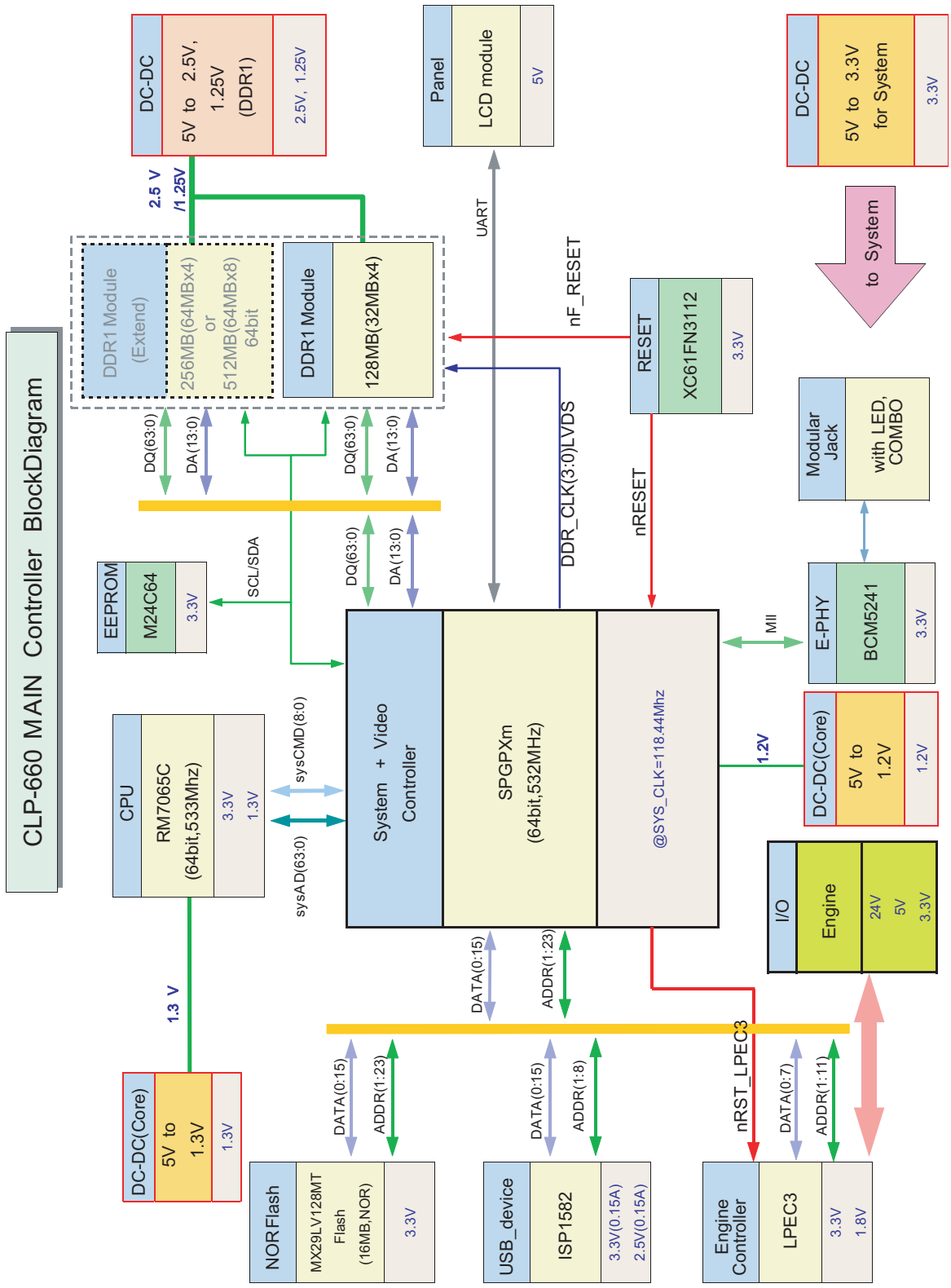
SA : SERVICE AVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | SEC_Code | Description | QT'y | Service | Remark |
|---|---|---|---|---|---|
| 5.15-0 | JC96-04503A | ELA HOU-UNIT-CASSETTE | 1 | SA | |
| 5.15-1 | JC97-02844A | MEA-UNIT_HOLDER PAD | 1 | SA | |
| 5.15-2 | JC61-01220C | FRAME-M_CASSETTE | 1 | SA | |
| 5.15-3 | JC61-01227A | GUIDE-M-PAPER SIZE | 1 | SA | |
| 5.15-4 | JC61-01223A | FRACKET-P-EXTENTION | 1 | SA | |
| 5.15-5 | JC61-01224C | GUIDE-M_EXTENSION CST | 1 | SA | |
| 5.15-6 | JC64-00190B | KNOB-M_REAR | 1 | SA | |
| 5.15-7 | JC61-00414A | SPRING ETC-GUIDE PAPER | 2 | SA | |
| 5.15-8 | JC61-00267B | GUIDE-M-LOCK A | 1 | SA | |
| 5.15-9 | JC61-01226B | GUIDEM_REAR | 1 | SA | |
| 5.15-10 | JC61-00751A | GUIDE-P-REAR PAPER CST | 1 | SA | |
| 5.15-11 | JC72-41210A | PMO-LOCKER PLATE | 1 | SA | |
| 5.15-12 | JC61-70531A | SPRING ETC-LOCKER_PLATE | 1 | SA | |
| 5.15-13 | JC61-01245A | PLATE-P-KNOCK UP | 1 | SA | |
| 5.15-14 | JC61-00455A | SPRING ETC-PLATE K/UP | 1 | SA | |
| 5.15-15 | JC73-00141A | RPR-PAD CASSETTE | 1 | SA | |
| 5.15-16 | JC61-70911A | SPRING ETC-EXIT ROLL FD | 1 | SA | |
| 5.15-17 | JC61-01228A | HOLDER-M-PAD_HOUSING | 1 | SA | |
| 5.15-18 | JC63-01206A | GROUND-CASSETTE | 1 | SA | |
| 5.15-19 | JC66-40003A | GEAR-PINION | 1 | SA | |
| 5.15-20 | JC67-01222A | GUIDE-P-SIDE_L | 1 | SA | |
| 5.15-21 | JC67-00037A | CAP-M-GUIDE SIDE_L | 1 | SA | |
| 5.15-22 | JC61-01244A | GUIDE-P-SIDE_R | 1 | SA | |
| 5.15-23 | JC61-01225B | GUIDE-M_SIDE LOCK | 1 | SA | |
| 5.15-24 | JC66-01409A | LEVER-INDICATOR_SCF | 1 | SA | |
| 5.15-25 | JC68-01552A | LABEL¢Á-CASSETTE | 1 | SNA | |
| 5.15-26 | JC64-00268A | SHUTTER-PATH | 1 | SA | |
| 5.15-27 | JC61-01724A | GUIDE-PAPER | 1 | SA | |
| 5.15-28 | JC63-01306A | COVER_HANDLE | 1 | SA | |
| 5.15-29 | 6002-000440 | SCREW-TAPPING | 8 | SA | |

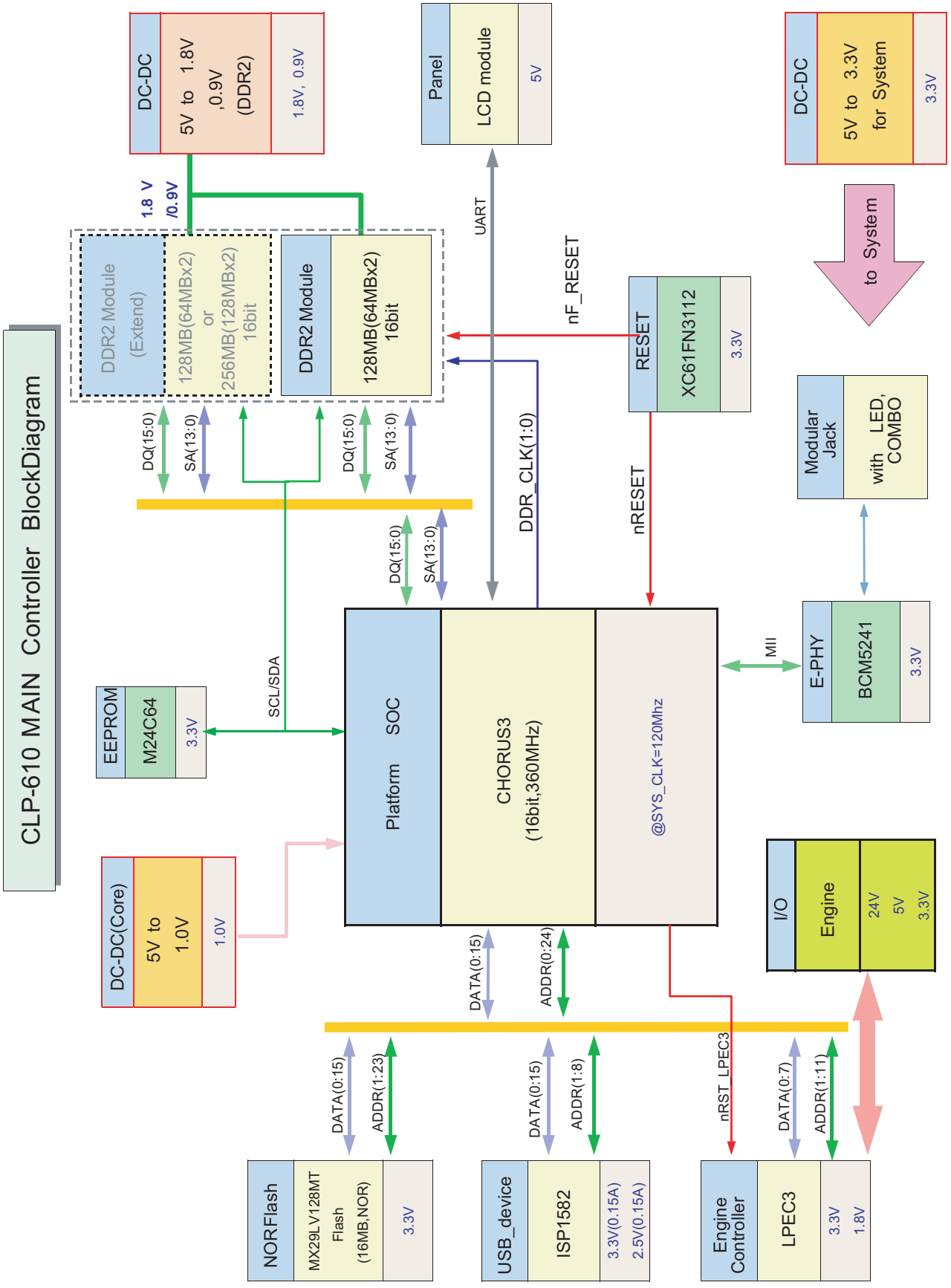
# 6. System Diagram

## 6.1 Block Diagram

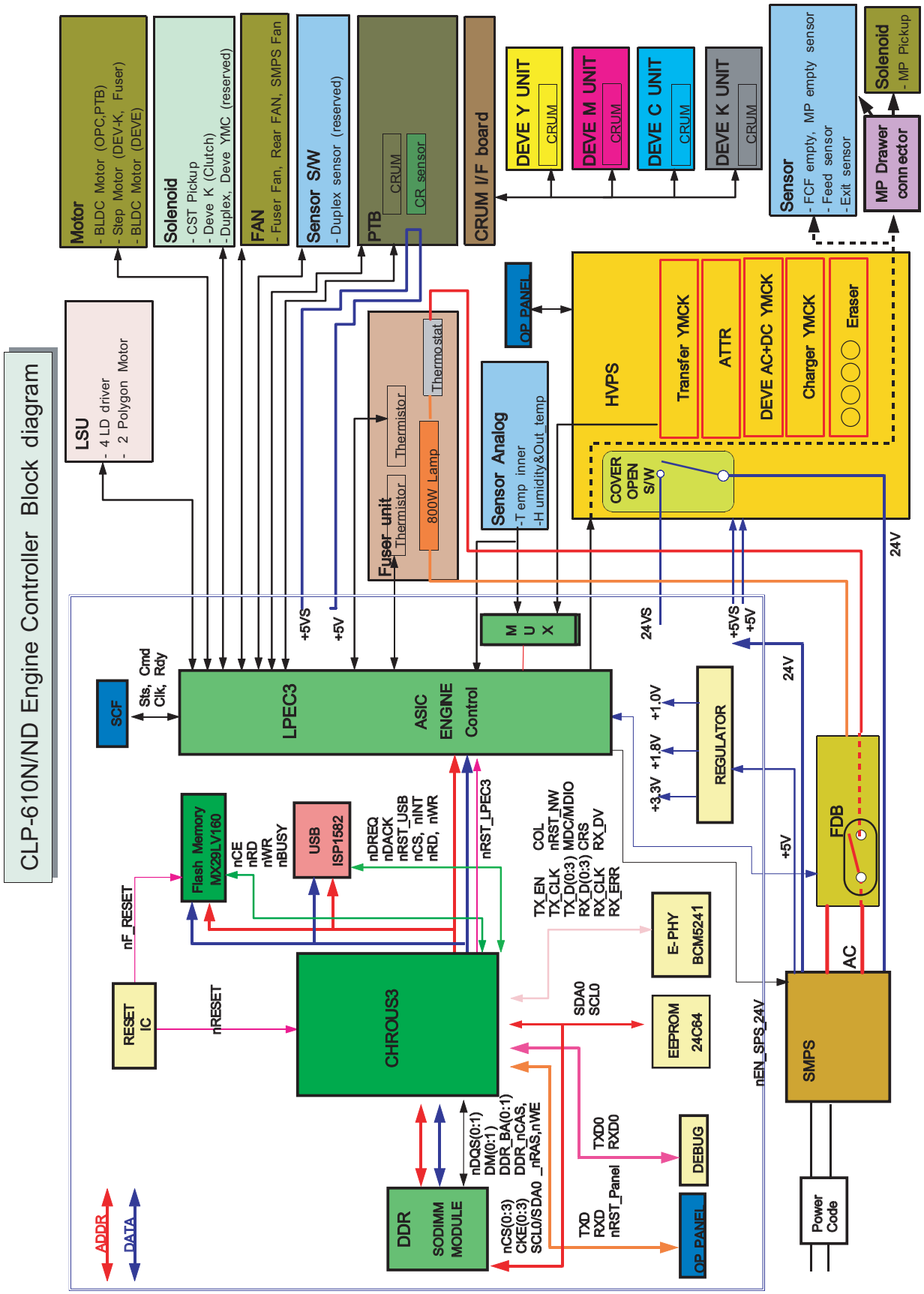
### 6.1.1 24ppm Main Controller Block Diagram(CLP-660)



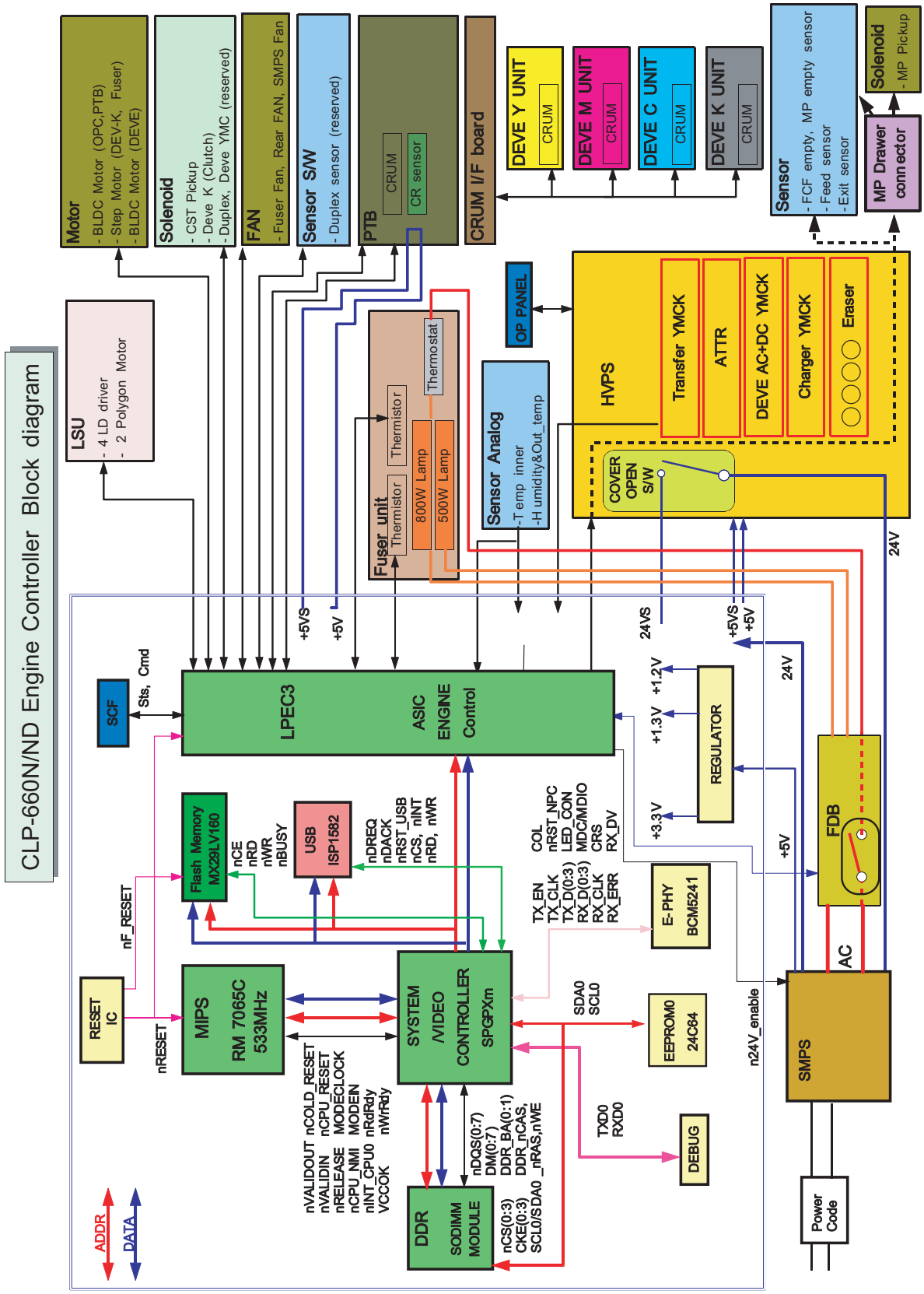
## 6.1.2 20ppm Main Controller Block Diagram(CLP-610)



## 6.1.3 CLP-610N-610ND Engine Controller Block Diagram

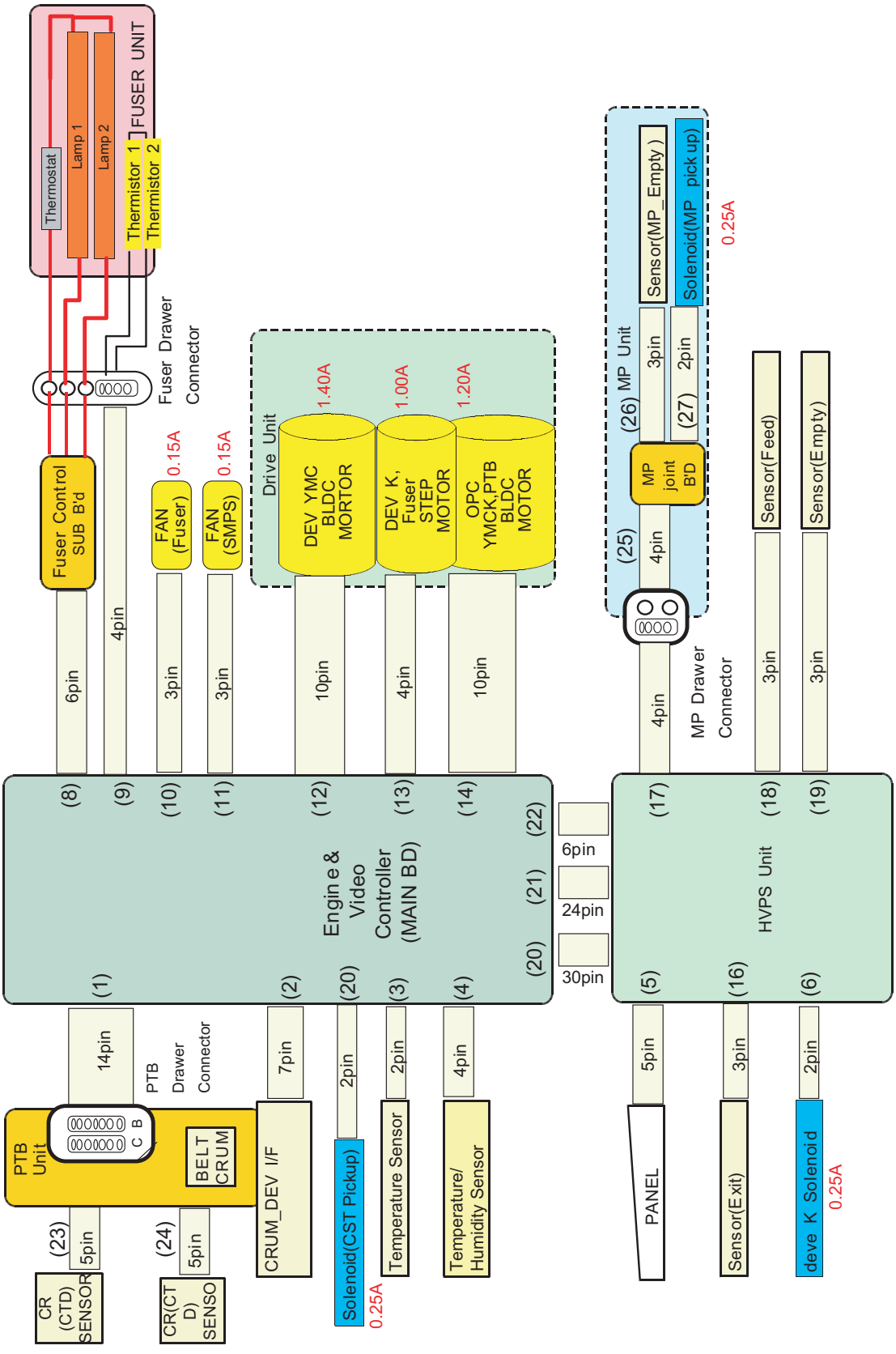


## 6.1.4 CLP-660N-660ND Engine Controller Block Diagram

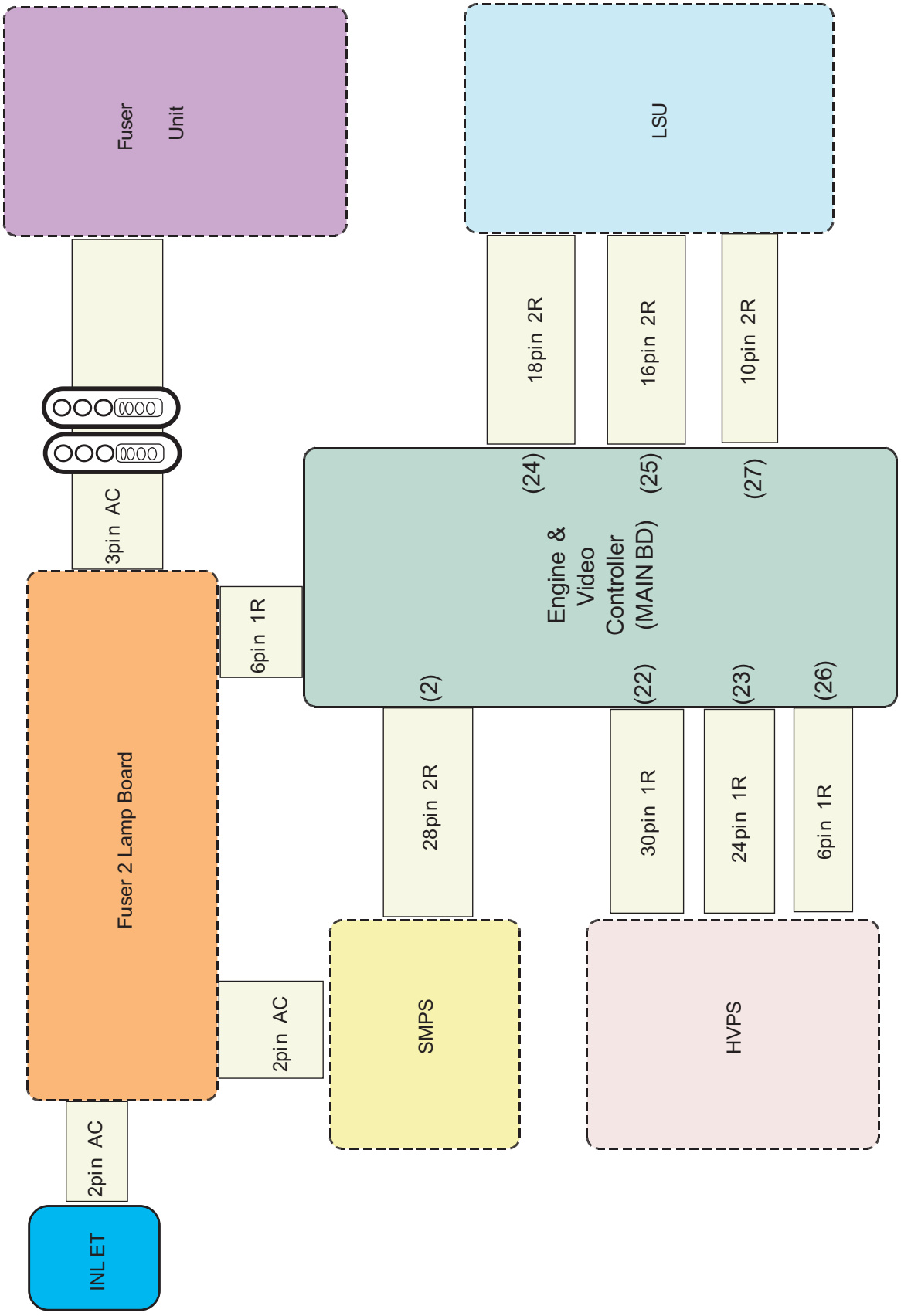


# 6.2 Connection Diagram

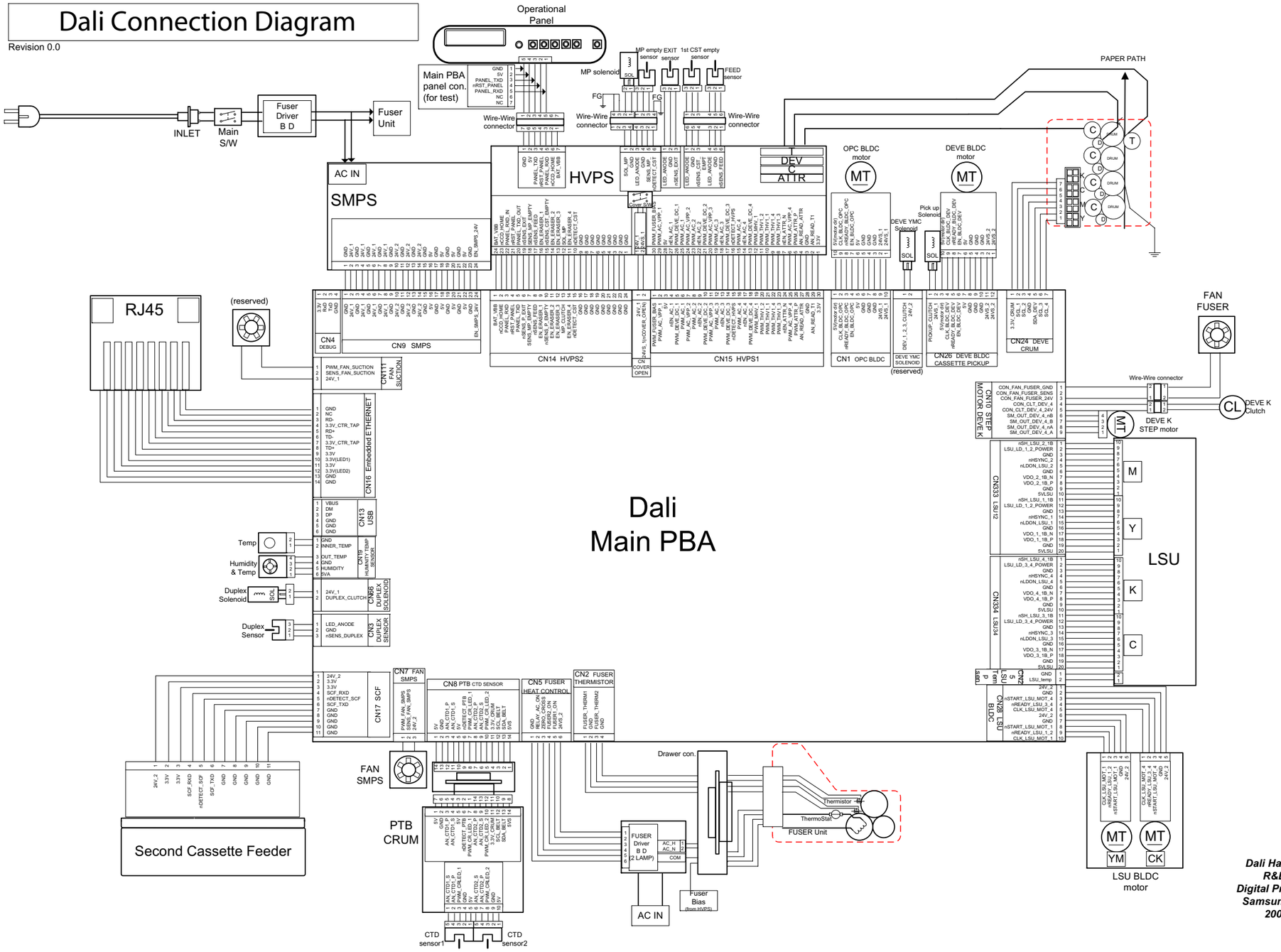
## 6.2.1 Connection Diagram(1)



## Connection Diagram(2)



## Connection Diagram(3)



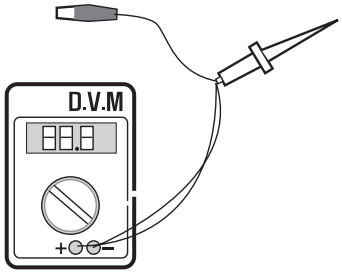
# 7. Reference Information

This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of tests pages and Wireless Network information definition is also included.

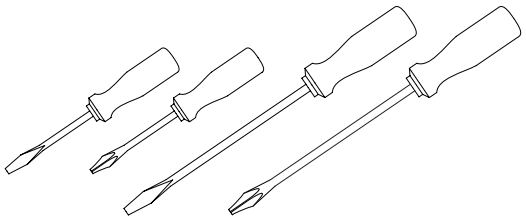
## 7.1 Tools for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

- **DVM(Digital Volt Meter)**
  Standard : Indicates more than 3 digits.



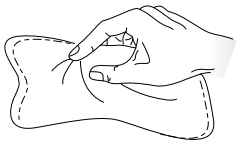

- **Driver**
  Standard : "-" type, "+" type (M3 long, M3 short, M2 long, M2 short).



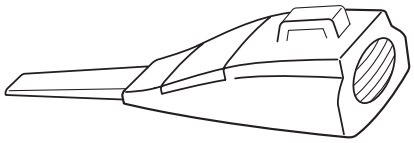
- **Tweezers**
  Standard : For general home use, small type.

- **Cotton Swab**
  Standard : For general home use, for medical service.

- **Cleaning Equipments**
  Standard : An IPA(Isopropyl Alcohol)dry wipe tissue or a gentle neutral detergent and lint-free cloth.

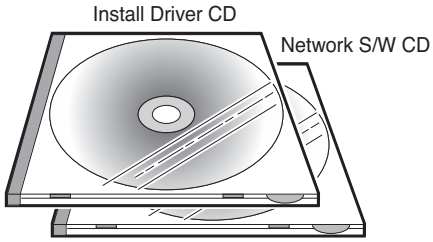


- **Vacuum Cleaner**



- **Brush**

- **Software (Driver) installation CD ROM**



# 7.2 Acronyms and Abbreviations

The table below explains the abbreviations and acronyms used in this service manual. Where abbreviations or acronyms are used in the text please refer to this table.

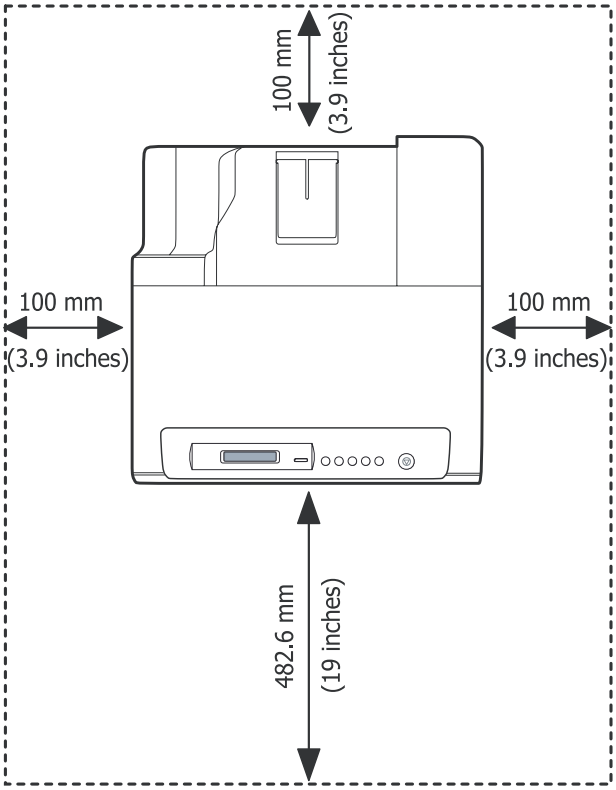
| | |
|---|---|
| ADC | Analog-to-Digital-Conversion |
| AP | Access Point |
| AC | Alternating Current |
| ASIC Circuit | Application Specific Integrated |
| ASSY | Assembly |
| BIOS | Basic Input Output System |
| BLDC Motor | Brushless DC Motor |
| CLBP | Color Laser Beam Printer |
| CMOS | Complementary Metal Oxide Semiconductor |
| CMYK | Cyan, Magenta, Yellow, Black |
| CN | Connector |
| CON | Connector |
| CPU | Central Processing Unit |
| CTD Sensor | Color Toner Density Sensor |
| dB | Decibel |
| dBA | A-Weighted decibel |
| dBm | Decibel milliwatt |
| DC | Direct Current |
| DCU | Diagnostic Control Unit |
| DIMM | Dual In-line Memory Module |
| DPI | Dot Per Inch |
| DRAM | Dynamic Random Access Memory |
| DVM | Digital Voltmeter |
| ECP | Enhanced Capability Port |
| ECU | Engine Control Unit |
| EEPROM | Electronically Erasable Programmable Read Only Memory |
| EMI | Electro Magnetic Interference |
| EP | Electro photographic |
| EPP | Enhanced Parallel Port |
| F/W | Firmware |
| FCF/FCT | First Cassette Feeder/First Cassette Tray |
| FISO | Front-In, Side-Out |
| FPOT | First Print out Time |
| GDI | Windows Graphic Device Interface |
| GIF | Graphic Interchange Format |
| GND | Ground |
| HBP | Host Based Printing |
| HDD | Hard Disk Drive |
| HTML | Hyper Text Transfer Protocol |
| HV | High Voltage |
| HVPS | High Voltage Power Supply |
| I/F | Interface |
| I/O | Input and Output |
| lb | Pound(s) |
| IC | Integrated Circuit |
| ICC | International Color Consortium |
| IDE | Intelligent Drive Electronics or Integrated Drive Electronics |
| IEEE | Institute of Electrical and Electronics Engineers. Inc |
| IOT | Image Output Terminal (Color printer, Copier) |
| IPA | Isopropy Alcohol |
| IPC | Inter Process CommunicationEPP Enhanced parallel Port |
| IPM | Images Per Minute |
| ITB | Image Transfer Belt |
| LAN | local area network |
| LBP | Laser Beam Printer |

| | |
|---|---|
| LCD | Liquid Crystal Display |
| LED | Light Emitting Diode |
| LSU | Laser Scanning Unit |
| MB | Megabyte |
| MHz | Megahertz |
| MPBF | Mean Prints Between Failure |
| MPF/MPT | Multi Purpose Feeder/Multi Purpose Tray |
| NIC | Network Interface Card |
| NPC | Network Printer Card |
| NVRAM | Nonvolatile Random Access Memory |
| OPC | Organic Photo Conductor |
| PBA | Printed Board Assembly |
| PCL | Printer Command Language , Printer Control Language |
| PCI | Peripheral Component Interconnect by Intel 1992/6/22, is a local bus standard developed by Intel and introduced in April, 1993 : A60, B60 Pins |
| PCL5Ce | Printer Command Language 5Ce-Color |
| PCL6 | Printer Command Language 6 |
| PDF | Portable Document Format |
| PDL | Page Description Language |
| Ping | Packet internet or Inter-Network Groper |
| PPD | Postscript Printer Discription |
| PPM | Page Per Minute |
| PS | Post Script |
| PS3 | Post Script Level3 |
| PTL | Pre-Transfer Lamp |
| PTB | Paper-Transfer Belt |
| PWM | Pulse Width Moduration |
| Q'ty | Quantity |
| RAM | Random Access Memory |
| RCP | Remote Control Panel |
| ROM | Read Only Memory |
| SCF/SCT | Second Cassette Feeder/Second Cassette Tray |
| SMPS | Switching Mode Power Supply |
| SPGP | Samsung Printer Graphic Processor |
| SPL | Samsung Printer Language |
| SPL-C | Samsung Printer Language-Color |
| Spool | Simultaneous Peripheral Operation Online |
| SRS | Software Requirment Specification |
| SURF | Surface Rapid Fusing |
| SW | Switch |
| sync | Synchronous or Synchronization |
| T1 | ITB |
| T2 | Transfer Roller |
| TRC | Toner Reproduction Curve |
| PnP | Universal Plug and Play |
| U.I. | User Interface |
| URL | Uniform Resource Locator |
| USB | Universal Serial Bus |
| VCCI | Voluntary Control Council for Interference Information Technology Equipment |
| WECA Alliance | Wireless Ethernet Compatibility |
| Wi-Fi | Wireless Fidelity |

# 7.3 Select a location for the printer

• Leave enough room to open the printer trays, covers, and allow for proper ventilation. (see diagram below)

• Provide the proper environment :
- A firm, level surface
- Away from the direct airflow of air conditioners, heaters, or ventilators
- Free of extreme fluctuations of temperature, sunlight, or humidity
- Clean, dry, and free of dust



# 7.4 A4 ISO 19752 Standard Pattern

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Stephen J. Singel
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23 January 2004

Jonathan Q. Maderia

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Mr.Maderia:

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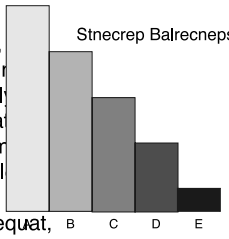


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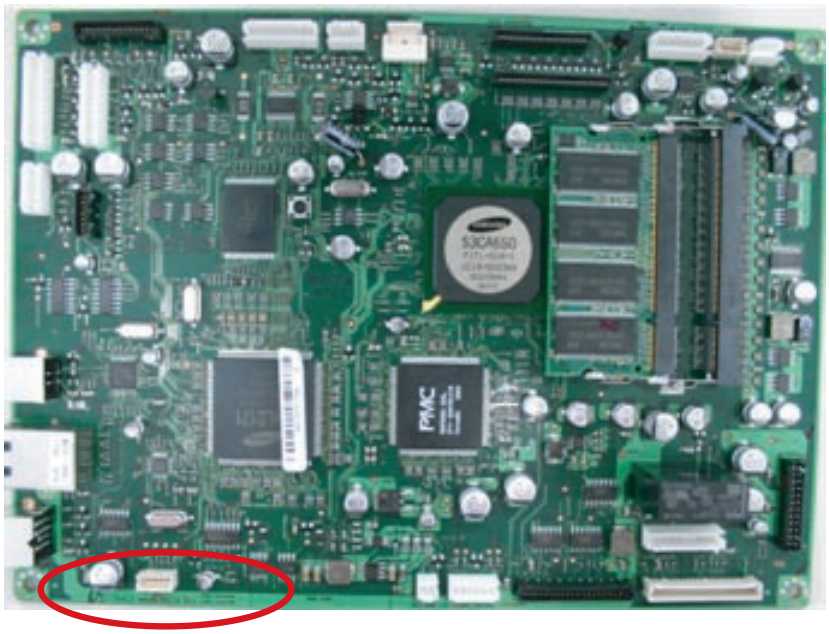
## 7.5 Model List

| Model Top Code | Description |
|---|---|
| CLP-610N | 20PPM ENGINE,Color Laser Printer,Networt |
| CLP-610ND | 20PPM ENGINE,Color Laser Printer,Networt,Duplex |
| CLP-660N | 24PPM ENGINE,Color Laser Printer,Networt |
| CLP-660ND | 24PPM ENGINE,Color Laser Printer,Networt,Duplex |
| CLP-T660A,B | PTB UNIT,50K |
| CLP-S660A | SCF,Second Cassette |
| CLP-C660A,B | UNIT DEVE-C, 4K(sales) |
| CLP-M660A,B | UNIT DEVE-M, 4K(sales) |
| CLP-Y660A,B | UNIT DEVE-Y, 4K(sales) |
| CLP-K660A,B | UNIT DEVE-K, 2K(sales) |
| CLP-MEM101 | PBA SUB-RAM DIMM,512M |
| CLP-MEM202 | PBA SUB-RAM DIMM,DDR2 DIMM_X16 |

## 7.6 Difference table(CLP-610 & CLP-660)

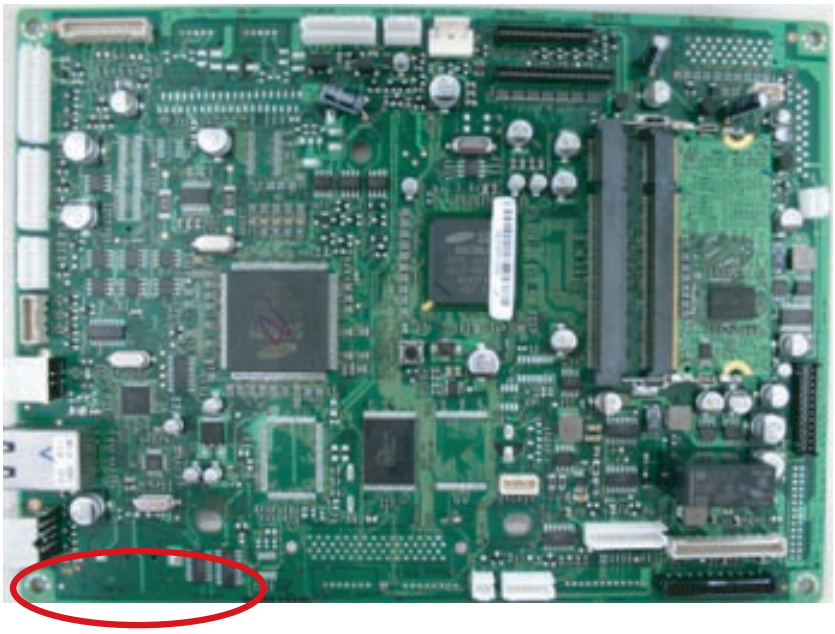
| NO | CLP-660 | | CLP-610 | |
|---|---|---|---|---|
| | SEC Code | Description | SEC Code | Description |
| 1 | JC92-01870A | Main PBA | JC92-01949A | Main PBA |
| 2 | JC44-00143A | FDB-MULTI_TRIAC V2C,CLP-660 | JC44-00153A | FDB-MULTI_TRIAC V2C,CLP-610 |
| | JC44-00142A | FDB-MULTI_TRIAC V1,CLP-660 | JC44-00152A | FDB-MULTI_TRIAC V1,CLP-610 |
| 3 | JC39-00667A | Fuser_Drawer_frame_3p | JJC39-00668A | Fuser_Drawer_frame_2p |
| 4 | JC92-01889A | PBA SUB-RAM DIMM,128MB | JC92-01923A | PBA-RAM DIMM,DDR2 |
| 5. | JC66-01300A | LEVER-FUSER-FRAME | JC66-01300A | LEVER-FUSER-FRAME |



View a point

PCB, PBA Code & Chip position

| MODEL | CLP-660N,ND | CODE | JC92-01870A | Main PBA |
|---|---|---|---|---|

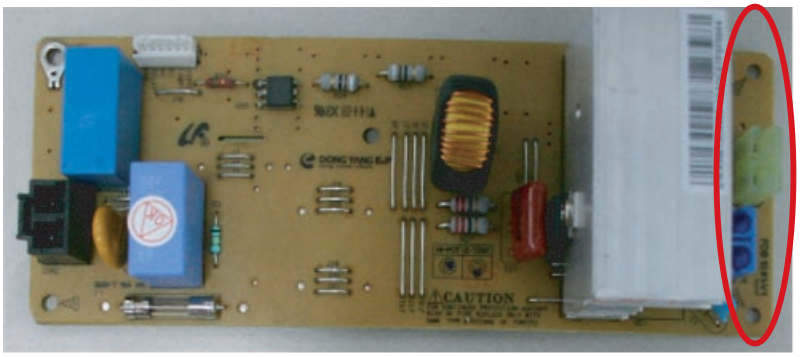


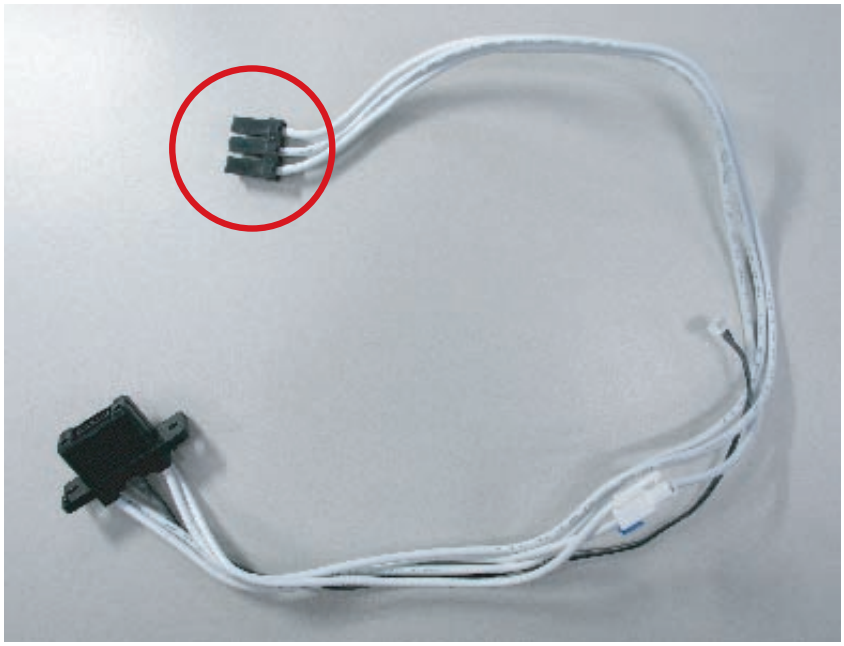
View a point

PCB, PBA Code & Chip position

| MODEL | CLP-610N,ND | CODE | JC92-01949A | Main PBA |
|---|---|---|---|---|

<table>
<tr><td colspan="4"> </td><td>View a point<br><br>PCB,PBA Code & Chip position ,connector pin Qt'y</td></tr>
<tr><td>MODEL</td><td>CLP-660N,ND</td><td>CODE</td><td>JC44-00143A<br>JC44-00142A</td><td>FDB-MULTI_TRIAC V2,CLP-660<br>FDB-MULTI_TRIAC V1,CLP-660</td></tr>
</table>

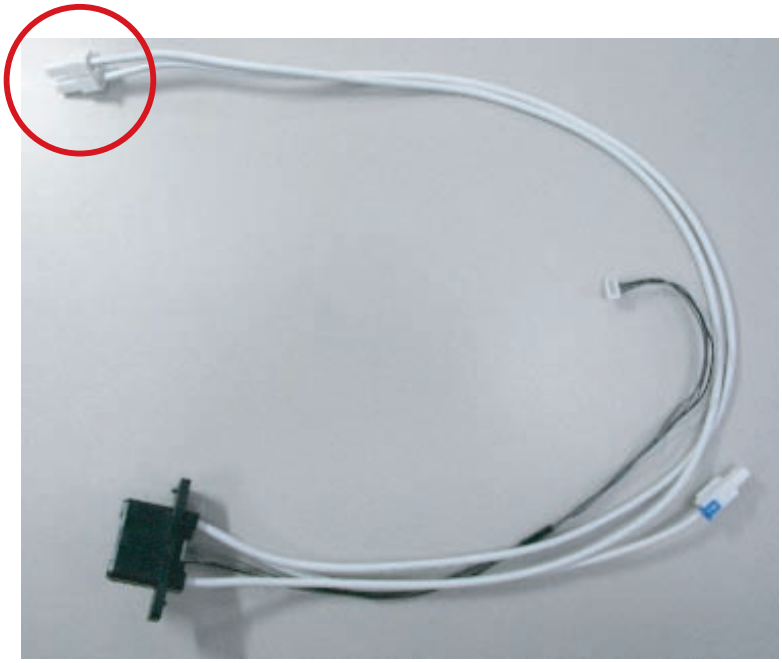
<table>
<tr><td colspan="4">  </td><td>View a point<br><br>PCB,PBA Code & Chip position ,connector pin Qt'y</td></tr>
<tr><td>MODEL</td><td>CLP-610N,ND</td><td>CODE</td><td>JC44-00153A<br>JC44-00152A</td><td>FDB-MULTI_TRIAC V2,CLP-610<br>FDB-MULTI_TRIAC V1,CLP-610</td></tr>
</table>



View a point

housing pin (3pin)

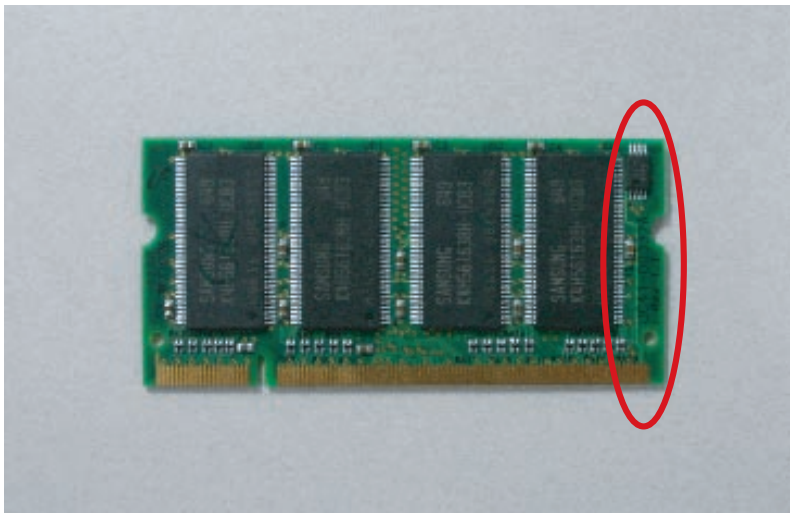
| MODEL | CLP-660N,ND | CODE | JC39-00667A | Fuser_Drawer_frame_3p |
|---|---|---|---|---|



View a point

housing pin (2pin)

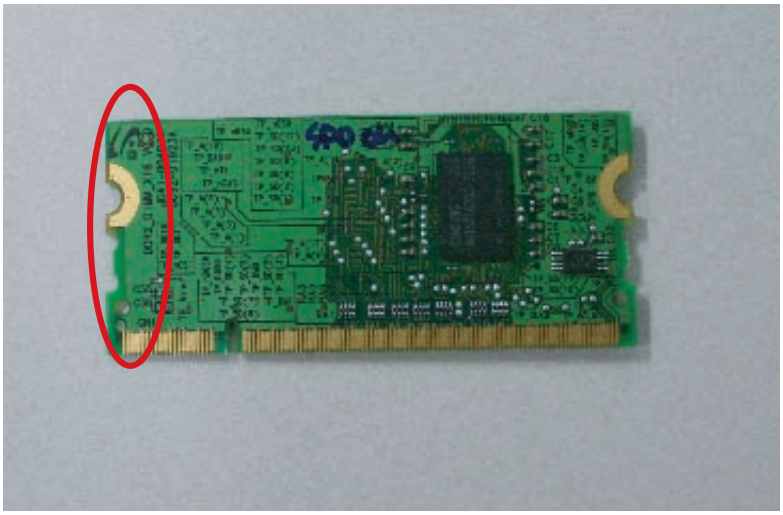
| MODEL | CLP-610N,ND | CODE | JC39-00668A | Fuser_Drawer_frame_2p |
|---|---|---|---|---|



View a point

PCB,PBA Code & Chip position

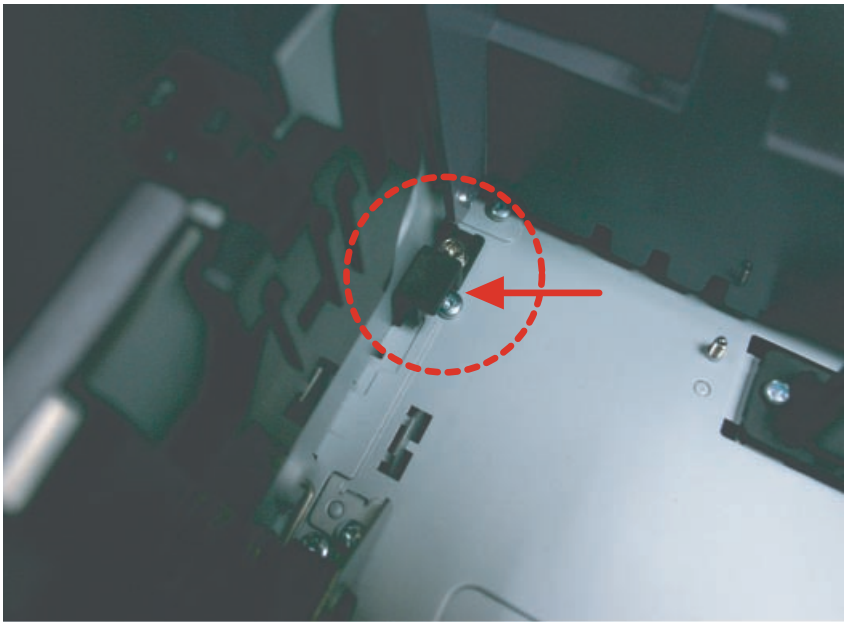
| MODEL | CLP-660N,ND | CODE | JC92-01889A | PBA SUB-RAM DIMM,128MB |
|---|---|---|---|---|



View a point

PCB,PBA Code & Chip position

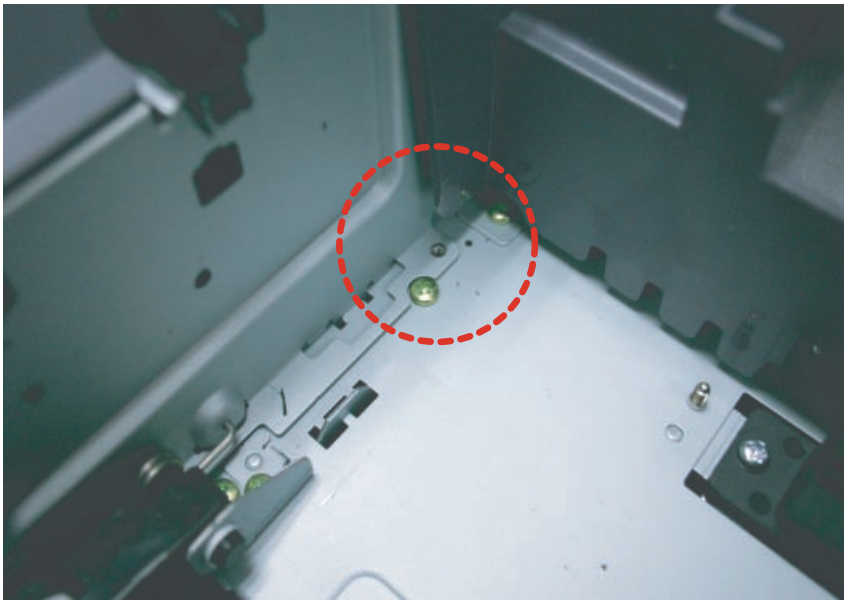
| MODEL | CLP-610N,ND | CODE | JC92-01923A | PBA-RAM DIMM, DDR2 |
|---|---|---|---|---|



View a point

LEVER-FUSER-FRAME (Y)

| MODEL | CLP-660N,ND | CODE | JC66-01300A | LEVER-FUSER-FRAME |
|---|---|---|---|---|



View a point

LEVER-FUSER-FRAME (None)

| MODEL | CLP-610N,ND | CODE | JC66-01300A | LEVER-FUSER-FRAME |
|---|---|---|---|---|

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